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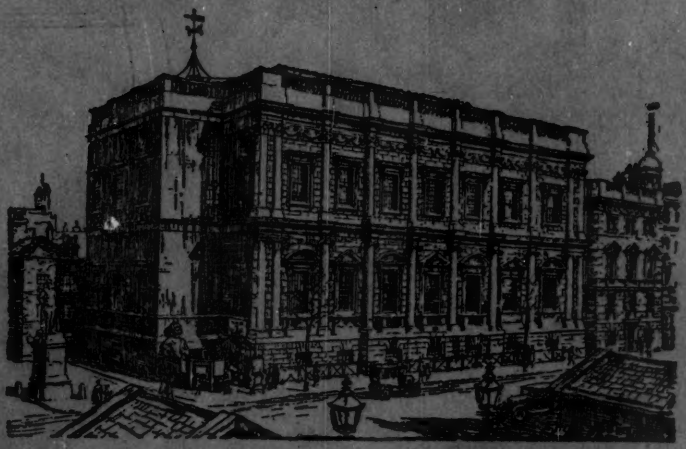

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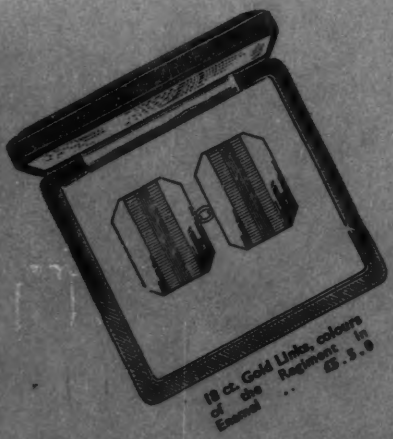

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Postal Address: Whitehall, London, S.W.1
Telephone No. Whitehall 5854.
Telegraphic Address: "Russatus, Parl, London."

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CORONATION PROCESSION

It is hoped to provide a limited number of seats for Members and their guests to witness the Coronation Procession down Whitehall on 12th May, 1937.

The actual number of seats will be dependent on approval of H.M. Office of Works and the Westminster City Council being given to the erection of stands.

Applications for seats can be accepted any time after 1st December, 1936, and should be made on the form enclosed in this JOURNAL, and addressed to the Secretary, Royal United Service Institution, Whitehall, S.W.1, the envelope being marked "Coronation."

REGISTRATION FEE. A remittance of 1S. PER TICKET must accompany each application. This is not returnable. Cheques, Postal Orders, etc., should be crossed "R.U.S.I. Coronation A/c."

Members as well as their guests must have tickets for seats. They need not accompany their guests, but are responsible that they are known to them personally.

The total number of tickets which can be allotted to each Member is THREE.

If the number of tickets applied for exceeds the available accommodation, a ballot will be taken.

The price of tickets is three guineas or two guineas, according to the position of the seats. In the event of the Procession not taking place or being postponed, the necessary percentage of all receipts will be retained in order to cover the expenses incurred. This arrangement will save the very high cost of insuring against such risk.

All applications for tickets must be received by 28th February, 1937. Members who have been successful in the Ballot will be notified. NO PAYMENTS FOR SEATS SHOULD BE MADE UNTIL SUCH NOTIFICATION HAS BEEN RECEIVED. On receipt of payment, tickets will be forwarded.

Tickets which cannot be used may be returned, and efforts will be made to dispose of them.

Light refreshments will be supplied to ticket holders.

THE INSTITUTION BUILDING

No guests will be allowed in the Reading or Writing Rooms of the Institution on the day of the Procession.

Members only may witness the Procession from the windows of these rooms.

In order to avoid overcrowding and to assist Members to reach the Institution, those who wish to use the Institution on that day are requested to apply for special "Members Only" Tickets to witness the Procession. If necessary a ballot will be held.

AMENDMENT TO STANDING ORDER REGARDING ARRANGEMENTS TO VIEW ROYAL PROCESSIONS

The Council have approved certain amendments to Standing Order, Chapter V, paragraph 2, in regard to the arrangements to view Royal Processions. This will now read as follows :—

Chapter V.

ROYAL PROCESSIONS.

2. With reference to Bye-Laws, Chapter III, paragraphs 18 and 19; on the occasions of Royal and other Processions passing down Whitehall, the Museum will be closed to the public and the number of friends which Members can introduce to the Museum and Institution will be limited, such admission being by special ticket, for which a charge of 2s. 6d. per person, not a Member, will be made. On very special occasions the charge will be regulated by the Council.

Tickets will be issued in order of application, and the names of the Member and his friends shall be written on each ticket; BUT ON SUCH OCCASIONS AS THE COUNCIL MAY CONSIDER ADVISABLE, ACCOMMODATION IN THE BANQUETING HALL SHALL BE BALLOTED FOR. Tickets are not transferable and not more than three tickets shall be issued to any one Member.

No places will be reserved. Entrance to the Institution on these occasions will be by the emergency exit from the Theatre in Whitehall Gardens.

On occasions when stands may be erected and a charge made for tickets for the same, such tickets will be allotted by ballot, AND SEATS MAY BE RESERVED.

H.R.H. THE DUKE OF GLOUCESTER

His Royal Highness the Duke of Gloucester presided at the inaugural meeting of the Allenby Memorial Fund which was held in the Theatre of the Institution on the evening of the 27th October. The Marquess of Carisbrooke, Mr. Duff Cooper —Secretary of State for War, Field-Marshal Sir Philip Chetwode, and General Sir Felix Ready were also present and spoke in support of the project.

His Royal Highness afterwards visited the Banqueting Hall and signed the visitors' book.

Council

Air Marshal Sir Arthur M. Longmore, K.C.B., D.S.O., has succeeded Major-General R. H. Haining, D.S.O., as an *ex-officio* Member of the Council on taking up the appointment of Commandant of the Imperial Defence College.

New Members

The following officers joined the Institution during the months of August, September and October :—

ROYAL NAVY

Lieutenant J. J. S. Yorke, R.N.
Commander K. L. Harkness, R.N.
Lieutenant E. C. E. Palmer, Royal Marines.
Sub-Lieutenant G. R. A. Don, R.N.
Lieutenant J. de F. Jago, R.N.
Lieutenant F. M. Griffiths, R.N.

Lieutenant-Commander R. L. Tufnell, R.N., M.P.
Paymaster Lieutenant-Commander J. E. Sorrell, R.N.R.
Commander W. F. Smithwick, D.S.C., R.N.
Lieutenant C. M. Donner, R.N.
Lieutenant W. E. C. Lowndes, R.N.
Paymaster-Commander C. J. H. Cowdy, R.D., R.N.R.
Lieutenant Ll. H. Harries, late Royal Marines.
Captain B. A. W. Warburton-Lee, R.N.
Lieutenant-Commander T. F. S. Wilson, R.N.
Sub-Lieutenant M. I. Kennard, R.N.
Commander G. Lee-Morris, V.D., R.N.V.R.

ARMY

2nd Lieutenant A. G. Paris, Royal Signals.
2nd Lieutenant G. C. F. Gwyer, Grenadier Guards.
Lieutenant H. F. C. Horne, Royal Artillery.
Major G. Baillie, M.B., R.A.M.C. (ret.).
2nd Lieutenant P. H. C. Hanbury, Grenadier Guards.
Captain P. J. Cator, Royal Engineers.
Lieutenant J. R. Cochrane, Royal Artillery.
2nd Lieutenant J. A. Persse, The Rifle Brigade.
2nd Lieutenant D. P. Teichman, 4th Bn. The Wiltshire Regiment.
Lieutenant H. Marsh, The Middlesex Regiment.
Lieutenant A. T. M. Durand, 5th City of London Regiment (London Rifle Brigade).
Captain A. D. G. Orr, The Royal Scots Fusiliers.
Colonel R. T. Snowden-Smith, C.B.E.
Captain H. M. Gough, R.A.S.C.
Lieutenant R. F. M. Humphery, The Hampshire Regiment.
Captain J. H. E. Nash, 2/13th Frontier Force Rifles.
Lieutenant M. F. S. Sydenham-Clarke, The Queen's Royal Regiment.
Lieutenant M. B. Gohel, 1st Bn. 7th Rajput Regiment.
2nd Lieutenant C. Earle, Grenadier Guards.
Captain F. G. B. Arkwright, 12th Royal Lancers.
2nd Lieutenant V. A. P. Budge, Grenadier Guards.
Lieutenant L. C. Bower, 60th Rifles.
Colonel A. S. Capper, D.S.O.
Major H. J. Harvey, M.C., Royal Tank Corps.
Lieutenant G. S. K. Johnston, Royal Artillery.
Captain C. H. Campbell, 7th Gurkha Rifles, I.A.
2nd Lieutenant G. E. Pike, Grenadier Guards.
Captain J. C. D. Bruce, 2/3rd Q.A.O. Gurkha Rifles, I.A.
2nd Lieutenant B. O. P. Eugster, Irish Guards.
2nd Lieutenant J. D. Hornung, Irish Guards.
2nd Lieutenant R. E. S. Beirne, The Loyal Regiment.
Captain H. R. H. Davies, Grenadier Guards.
2nd Lieutenant P. C. White, The Cheshire Regiment.
Lieutenant J. H. Hare, Oxfordshire and Buckinghamshire Light Infantry.
Lieutenant H. V. Ewbank, Royal Corps of Signals.
Captain G. P. Warden, 3rd Carabiniers.
Major J. B. Browne, 16th/5th Lancers.

Lieutenant G. T. H. Campbell, K.O.Y.L.I.
2nd Lieutenant W. P. Hobbs, Royal Artillery.
Captain the Hon. R. J. Napier, Royal Engineers.
2nd Lieutenant W. S. G. Maydwell, The Somerset Light Infantry.
Captain H. R. Jones, 6th Royal Bn. (Scinde) 13th Frontier Force Rifles.
Captain the Right Hon. the Earl of Kingston, late Irish Guards.
Captain J. F. C. Marshall, M.C., Royal Artillery.
Captain A. C. Young, The Bedfordshire and Hertfordshire Regiment.
Lieutenant A. G. Jelf, The Buffs.
Captain J. H. Orgill, The Manchester Regiment.
2nd Lieutenant H. Knight, Scots Guards.
2nd Lieutenant W. D. M. Raeburn, Scots Guards.
2nd Lieutenant M. N. Romer, Scots Guards.
Captain R. W. S. Lethbridge, Royal Garhwal Rifles, I.A.
Lieutenant W. D. Tarr, Royal Artillery.
Lieut.-Colonel F. R. Sedgwick, C.M.G., D.S.O., late Royal Artillery.
Lieutenant A. Skeen, The Royal Berkshire Regiment.
2nd Lieutenant C. G. F. Bryan, Coldstream Guards.
2nd Lieutenant H. L. F. Jones, The Dorsetshire Regiment.
Lieutenant E. Baillieu, 6th Bn. The Royal Melbourne Regiment.
Captain C. N. C. Copeman, M.C., The Leicestershire Regiment.
Lieutenant T. A. Thomson, 6th (Lanarkshire) Bn. The Cameronians (Scottish Rifles).
Lieut.-Colonel P. D. Stewart, D.S.O., late 3rd P. of W. Dragoon Guards.
Captain R. D. Morris, R.E. (R. of O.).

ROYAL AIR FORCE

Flight Lieutenant J. A. H. Louden, R.A.F.
Squadron Leader E. B. Addison, R.A.F.
Squadron Leader Harald Peake, A.A.F.
Flying Officer H. Stones, R.A.F.
Squadron Leader D. V. Carnegie, A.F.C., R.A.F.
Pilot Officer M. H. Romer, R.A.F.
Flying Officer E. N. Lowe, R.A.F.
Flight Lieutenant B. A. Casey, R.A.F.
Squadron Leader J. MacG. Fairweather, D.F.C., R.A.F.

Suspension of Entrance Fee

As a temporary measure and especially to enable as large a number of officers as possible to avail themselves of the facilities offered by the Institution during the period while His Majesty's Forces are being increased, the Entrance Fee has been suspended.

Officers of all ranks whose names appear on the current official lists can, therefore, join the Institution by paying the annual subscription of £1 5s. only. Membership will date from the 1st January.

Gold Medal Essay (Naval) 1937

The following subject has been selected :—

"Discuss in its widest aspects the strength and composition of the Navy at which we should aim to-day."

Gold Medal Essay (Military) 1936

The following essays have been received :—

"Eheu Fugaces. . . ."

"Goes the extreme animal.
The entire pig without a doubt."

"Bullets—not bodies"

"Respice Finem"

"Hope springs eternal."

Change of Address

Members are reminded that they are responsible for keeping the Secretary informed of any change of address. Non-receipt of the JOURNAL is almost invariably attributable to the fact that the Member has not notified his movements.

Members' Letters

Members may have letters and telegrams addressed to them at the Institution, but the Council accept no responsibility for their custody, and no arrangements can be made for forwarding them.

R.U.S.I. XMAS CARDS

Two Xmas cards, specially designed for Members of the Institution, are now available. The cover in each case bears the Institution's crest in gold ; one card has a reproduction of the original artist's black and white sketch of the exterior of the Banqueting House and Institution building ; the other is a reproduction of a photograph of the interior of the Banqueting Hall. The ribbon is a three-coloured one, combining Navy blue, Army red, and Air Force light blue.

The price, including envelopes, is 4s. per dozen, post free.

Members are requested to make early application for the number of cards they require, stating which design, and enclosing the requisite remittance with their order.

LIBRARY

Facilities for Borrowing Books

The special attention of Members who are paying the comprehensive annual subscription of £1 5s. od., is invited to the fact that they are thereby entitled to the full privileges of the Lending Library without further charge. These include the right to have sent to them not more than four volumes at a time on loan, the Member paying postage both ways.

Old Members who have not wished to conform to the new arrangement and who are still paying the original subscription of £1 1s. od., must pay an additional subscription of 10s. per annum in order to belong to the Lending Library.

All Members are, of course, free to use the Library when they visit the Institution.

Rules Governing Return of Books

The attention of Members is invited to the following Regulations governing the retention and return of books :—

(1) Certain books, for which there is a special demand, must not be retained longer than a fortnight after the date of receipt. A notice to this effect will be found in the book.

(2) In the United Kingdom.—Books must normally be returned within one month of the date of issue; but the Librarian is authorized to make extensions of one month at a time on application by a Member, up to a maximum of three months from the date of issue, if the work is not required by another Member.

(3) Stations Abroad.—When books are sent to Members abroad the same rules apply as for the United Kingdom, except that "the date of receipt is substituted for "the date of issue."

N.B.—IN VIEW OF THE INCREASING DEMAND FOR BOOKS FROM THE LENDING LIBRARY, IT IS ESSENTIAL IN THEIR OWN INTERESTS THAT MEMBERS SHOULD ADHERE STRICTLY TO THE RULES GOVERNING THE RETURN OF BOOKS. FAILURE TO DO SO IS CAUSING MUCH INCONVENIENCE, AND INVOLVING THE INSTITUTION IN UNNECESSARY EXPENSE AND CLERICAL LABOUR.

Periodicals for Sale

The following periodicals for 1937 will be sold to the highest bidder:—"The Aeronautical Journal," "Airways," "Blackwood's Magazine," "The Blue Peter," "Flight," "The Journal of the Royal Geographical Society," "Punch," "New Statesman and Nation," "The Spectator" and "The Scientific American."

Offers should be addressed to the Librarian before 15th January, 1937. Copies will be despatched as they are withdrawn from the Reading Room.

As a guide to prospective bidders, the following sums were received last year:—"Blackwood's Magazine," 16s.; "The Blue Peter," 7s. 6d.; "Punch," 13s.; "New Statesman and Nation," 8s.; "The Spectator," 13s.

HISTORY OF THE 9TH QUEEN'S ROYAL LANCERS.

A Regimental History of the 9th Queen's Royal Lancers is in course of preparation, and the author would be most grateful if any available material in the way of diaries, descriptive letters, sketch maps, photographs, etc., could be lent for this purpose. Records or information about sporting events would be particularly useful; they would be carefully preserved and returned when finished with. They should be sent by registered post to Major E. W. Sheppard, Gothic Cottage, Sandhurst, Camberley, Surrey.

JOURNAL

February Journals

Owing to the influx of new Members, there has been a heavy demand for the JOURNAL of February, 1936. Will any Member who has finished with his copy kindly return it in order to assist in replenishing the stock.

MUSEUM

"Our Air Forces—Past and Present"

This Exhibition has proved so successful that it is being retained until after the Xmas holidays.

Cavalry Exhibition

It is intended to organize an Exhibition of pictures, uniforms, relics and other mementoes associated with the history and traditions of British Cavalry early in the New Year.

Additions

(8861) Sword of the Bombay Artillery and Infantry sword, 1850; model of a French gun, 1730.—Presented by Miss Jacob.

(8862) Quadrant.—Presented by Paymaster-Commander J. G. Elgar, R.N.

(8863) Engraving of the Banqueting House of Whitehall Palace.—Presented by Colonel E. Posset.

(8864) Helmet of a Volunteer Corps raised during the Indian Mutiny.—Presented by Mrs. Herapath.

(8865) German Naval Officer's sword, taken from an officer at Hong Kong trying to reach Tsingtao.—Presented by Major-General A. A. McHardy.

(8866) Photographs of the first Zeppelin raid over England.—Presented by Miss Misner.

(8867) Flag flown from the Residency, Lucknow, July–November, 1934.—Presented by Lord Hailey.

(8868) Silk handkerchief printed with pictures of Wellington's victories.—Presented by the Rev. A. Palmer.

(8869) Model of a schooner; model of a French time-gun; six model guns.—Presented by Major A. E. Palmer.

(8872–8874) Medals, Orders and Decorations of the late Field-Marshal the Viscount Allenby, and his Field-Marshal's baton.—Bequeathed by the late Viscount Allenby.

(8875) Surgeon's uniform, 15th Light Dragoons, 1854.—Presented by Mrs. H. C. M. Brett.

(8876) Model of the Fairey "Battle" bomber aeroplane.—Presented by the Fairey Aviation Co.

(8877) Engraving of Admiral Lord Collingwood.—Presented by Mrs. Spenser.

(8878) Headdress, Royal Canadian Regiment, 1900.—Presented by Major H. T. Cock.

(8879) Model of a Short Singapore III flying boat.—Presented by Messrs. Short Bros.

(8880) Collection of water-colour sketches of warships, 1858–1893. Presented by E. Paterson.

(8881) Tunic, sabretache and slings of the 5th Royal Irish Lancers, 1890; Staff tunic, 1890.—Presented by Captain P. T. Pirie.

(8882) Model of a Fairey "Swordfish" 2–3-seater reconnaissance biplane. Presented by the Fairey Aviation Co.

(8883) Fly whisk used by General Sir Ian Hamilton during the Gallipoli campaign.—Presented by Major Sir R. I. Tasker.

Loans

(3629) Old fire-shot found at Acre Citadel.—Lent by the Palestine Government.

(3630) Shoulder belt plates of the Hants Local Militia and Volunteer Infantry.—Lent by the Rev. G. H. Field.

(3631–3632) Collection of Medals.—Lent by Lieutenant W. J. Wingrove, R.N.

(3633) Officer's full-dress coatee, 3rd Dragoon Guards.—Lent by the Regiment.

(3634) Ring, formerly the property of Lady Hamilton.—Lent by Lieut.-Colonel H. Castle-Smith.

(3635) Models of H.M. Ships "Curacoa" and "Exeter."—Made and lent by Commander H. H. MacWilliam, R.N.

(3636) Collection of relics of Colonel Lawrence (T. E. Shaw).—Lent by the Air Ministry.

(3637) Gold medal for gallantry awarded to C. Peters.—Lent by I. Peters.

Attendance

The amount taken for admission during the past quarter was :—

£283 11s. 6d. in August.
£192 7s. 6d. in September.
£108 12s. od. in October.

By courtesy of
William Foster & Co., Ltd., Lincoln.

TWENTY YEARS AGO

From the picture by
John Hassall, R.I.

THE JOURNAL

OF THE

Royal United Service Institution

Vol. LXXXI. NOVEMBER, 1936 No. 524.

[**Authors alone are responsible for the contents of their respective Papers. All communications, except those for perusal by the Editor only, should be addressed to the Secretary, Royal United Service Institution.**]

THE SEARCH FOR SECURITY AGAINST WAR

By H. WICKHAM STEED.

On Wednesday, 21st October, 1936.

FIELD-MARSHAL SIR A. A. MONTGOMERY-MASSINGBERD, G.C.B., K.C.M.G., LL.D., in the Chair.

THE CHAIRMAN: I do not think Mr. Wickham Steed needs any introduction to an audience here. I would just remind you that about five years ago he lectured here on "Armament and Disarmament since 1918." Probably a good many of you here present to-day heard what he had to say on that occasion and, considering what has happened in the last five years, what he is going to tell us this afternoon will prove of particular interest.

LECTURE.

A LITTLE more than five years ago it was my privilege to address the members of this Institution upon "Armament and Disarmament since 1918." Were I to-day to take up the parable at the point where it was left, not only by my own observations but by the valuable discussion which followed them, what a tale there would be to tell!

FIVE YEARS AGO

In October, 1931, the rearmament of Germany—then still ruled by the Government of the Weimar Republic, albeit with a "right little, tight little" Reichswehr in the background—had hardly gone beyond its initial stages. The relations between the Weimar Republic, including—perhaps especially—the Reichswehr, and Soviet Russia, including—perhaps especially—the Red Army, were intimate and cordial. True it may be that General von Seeckt, the real if not the "onlie begetter" of

the Reichswehr, had already made his plans for a huge German army of more than thirty divisions on a basis of at least two years' compulsory service; and that the veteran soldier, President Hindenburg, was not altogether unaware of these plans. But it seemed a far cry from the thinking to the doing; and those who, in this country or elsewhere, suggested that rearmament on this scale was the real object of German policy, even under the Weimar Republic, ran the risk of being looked upon as ill-natured opponents of the legitimate aspirations of the German people. Clear though it then was to competent eyes that the German military estimates were very curious productions, and that military outlay was being disguised in several other sections of the German budget, the most suspicious mind could not have entertained the thought that anything like £800,000,000 a year would soon be spent on German armaments.

Nor, in October, 1931, had the rearmament of Italy attained a level at all comparable to its present dizzy height. Signor Mussolini's recent boast that he can mobilize 8,000,000 trained men at any moment could not then have been uttered; nor, had it been uttered, would it have been received with blind belief. The Italian air force was indeed being rapidly increased, and Franco-Italian relations justified some uneasiness. Still, a prediction that, in the autumn and winter of 1935–36, Italy would or could send something like half a million men through the Suez Canal, with the stores and equipment needed for the conquest of an independent African State which Italy had helped to bring into the League of Nations, would have been scouted as verging upon absurdity.

If, in France, the Maginot line was already in course of construction, nobody took it for much more than a very "concrete" expression of French nervousness. Neither the later extension of the term of military service, nor the mobile preparations to resist aggression which have since been made, seemed to lie within the range of probability. The Franco-Polish alliance was unimpaired. Of a Franco-Soviet non-aggression pact nobody dreamed, all the less because the Russo-German Treaty of Rapallo—suddenly concluded during the Genoa Economic Conference of 1922—was still more or less intact, and the relations between Poland and Germany, on the one hand, and Poland and Russia on the other, were not distinguished by excessive cordiality.

In this country we were preparing for the great international disarmament conference that was to ensure peace among the nations, and to save their pockets, in the years to come. Only one warning voice had been heard, and it was soon silenced. Lord Cecil of Chelwood, though not generally suspected of militarist propensities, had returned from Geneva in December, 1930, bringing with him the draft Disarma-

ment Convention which had been laboriously worked out by the League's Preparatory Disarmament Commission. In a broadcast address to the nation he had said: "The price of disarmament is security. We have little more than a year in which to make up our minds whether we will pay that price or not."

THE INTERNATIONAL DISARMAMENT CONFERENCE

The International Disarmament Conference was due to meet early in February, 1932. The late Mr. Arthur Henderson—then British Foreign Secretary—who was soon to be its President-Elect, opened a national disarmament "drive" at the Queen's Hall in February, 1931, with a speech which deliberately ignored Lord Cecil's warning. One of its characteristic passages ran: "To us the Pact of Paris (the Kellogg Pact in Renunciation of War) is the renunciation of force in international affairs, and we believe that the renunciation of force in international affairs should carry with it the renunciation of the means of war." So self-destructive did this advocacy of disarmament seem to me that I put to Mr. Henderson publicly a question which he never answered. I asked whether he would say: "To us, as citizens, the renunciation of robbery and murder means the renunciation of force in private affairs, and we believe that this should carry with it the abolition of Scotland Yard." I asked him further whether he ought not to say: "We believe that the renunciation of force in international affairs should carry with it the renunciation of rights derived from the legality of war. We believe, further, that international agreement upon this point is the only means of getting and giving the security which is the price and condition of disarmament."

Long before the International Disarmament Conference met on 2nd February, 1932, it had become apparent that the lines on which the national disarmament "drive" was being conducted were thoroughly unsound. The financial crisis which led to the downfall of the Labour Government and to the formation of the first National Government in August, 1931, was at once utilized by Japan to strike her blow against China in Manchuria—a clear demonstration, if demonstration were needed, that weakness in this country is certain to entail untoward circumstances in many parts of the world. Yet, with some economy of straightforwardness, British official advocates of disarmament without security continued to lay stress upon the first part of the first paragraph of Article 8 of the League Covenant which runs: "The Members of the League recognize that the maintenance of peace requires the reduction of national armaments to the lowest point consistent with national safety." This they interpreted as a binding obligation which Great

Britain was bound to honour ; but they usually abstained, at that time, from citing the rest of the paragraph which, after the words " consistent with national safety," concluded " and the enforcement by common action of international obligations." In other words, they dodged the question of security. They made it appear that nations which, like France, insisted upon security as the condition of disarmament were unduly excited if not, indeed, secretly militarist and aggressive. They made constant play with the noble " example " of disarmament which Great Britain had set before the world, and they urged others to imitate it. They criticized severely the disarmament proposals made by French Governments, including the suggestions of M. André Tardieu for an international police force, and they appeared to think that disarmament would and could be achieved without any serious attempt to give effect to the concluding words of Article 8 which I have quoted.

With the idea of an international police force I cannot now deal fully, though it belongs to the history of the search for security against war. I will say only that neither M. Tardieu nor any partisan of an international police force—to be stationed somewhere, under the command of someone, in readiness to go anywhere and to separate or overawe prospective or actual combatants—was ready to answer plainly the question put to M. Tardieu by the irreverent French Royalist, M. Léon Daudet : " What is to happen if your international police force is beaten ? " They were not willing to say : " The nations which had helped to form the international police force would then have to back it up for all they were worth," because this answer would have invited the retort : " If so, why not begin by getting those nations to pledge themselves to do this from the outset ? " Now this was the question which no British Government since the War had been prepared frankly to face—if, for the present, we reserve judgment upon the famous speech in which Sir Samuel Hoare, as British Foreign Secretary, advocated on 11th September, 1935, collective action in restraint of Italian aggression upon Abyssinia and promised to support such action provided it were truly collective. The whole story of the search for security since the end of the Great War is shot through with British reservations and hesitations ; and it is this story which I propose now briefly to review.

In my address on 7th October, 1931, I dealt with President Wilson's definition of war aims in his " Fourteen Points " speech, the " freedom of the seas," the drafting of the League Covenant during the Paris Peace Conference, the recognition that neutrality must disappear as between members of the League, and the revival of potential American neutrality when the Senate at Washington rejected both the Versailles Treaty and the League Covenant in 1920. I pointed out that this

rejection, which included a repudiation of the Anglo-American Convention of 28th June, 1919, in guarantee of French security against aggression—until such time as the League of Nations should organize a superior degree of general security—freed Great Britain legally from her part of the undertaking which she had given to France jointly with the United States. Whether the British Government was wise to avail itself of this legal right is a question not easily to be answered in the affirmative. In any event this course was chosen, perhaps without thinking that British withdrawal from the guarantee to France must deprive this country of a wholesome influence over certain aspects of French policy in Europe, that it would increase both French nervousness and a feeling that France had paid for something which she had not received, and would put a premium upon the development of tendencies often described as French " militarism." If these consequences were not foreseen by Mr. Lloyd George and the principal members of his Cabinet, events speedily opened the eyes of their successors. It is safe to say that had Great Britain not withdrawn from her guarantee, the French would never have occupied the Ruhr; German " passive resistance " would not have led to so fantastic an inflation of the German currency, with its attendant ruin and misery for millions; the Hitlerite movement would not have made headway; and we might to-day be contemplating a very different and much more satisfactory kind of Europe than that which lies before our eyes.

EFFORTS TO STRENGTHEN THE COVENANT

Out of the Ruhr occupation and its failure—it had really been undertaken to give France control over those Rhineland territories which French soldiers wished to occupy more or less permanently until M. Clémenceau quashed their projects in view of the promised Anglo-American Convention of guarantee—there came, in swift succession, a number of efforts to ensure the security of Western and Central Europe against war. The first of these was the drafting in 1923 of a Treaty of Mutual Assistance designed to strengthen the League Covenant on the side of security and thus to prepare the ground for a measure of disarmament. This Draft Treaty was rejected by the first British Labour Government as being too complicated, and on the plea that the task of defining aggression was beyond the wit of man. Perhaps it was too much to expect that any arrangement of this kind would be accepted in England while feeling was running high against the French Nationalist occupation of the Ruhr. But in June, 1924, a French Government of the Left replaced its Nationalist predecessor. It agreed to evacuate the Ruhr. M. Herriot, the new Prime Minister, accepted the " Dawes " scheme for the settlement of reparations, and Mr. Ramsay MacDonald

and M. Herriot went in September to the League Assembly where they jointly sponsored a resolution out of which came a more ambitious Draft Treaty of mutual assistance, known as the Geneva Protocol for the Pacific Settlement of International Disputes.

The Geneva Protocol was far from being a perfect or, as drafted, a workable instrument. Opinions differ whether or not it could have been successfully amended. Rightly or wrongly, the second Baldwin Cabinet, which took office in the autumn of 1924 after the " Red Letter " election, decided that the Protocol could not be amended and must be rejected. Therefore Mr. Austen Chamberlain (as he then was) was sent to Geneva in March, 1925, to reject the Protocol altogether, though its eventual validity had expressly been made contingent upon the success of an international disarmament conference which was to meet at Geneva in the course of 1925.

My own view has always been that the Geneva Protocol could have been amended, and that the true reason for its rejection was not frankly stated. This reason was that the British Government was unwilling to run the risk of subscribing to any arrangement for collective security against war as long as the United States should be prospectively neutral towards any action which League members might take to restrain or coerce a State that should go to war in defiance of the Covenant. It was the old question of " the freedom of the seas," that is to say, the protection of neutral seaborne trade in time of war, with its possibilities of Anglo-American conflict. Nevertheless the Geneva Protocol had an unexpected consequence. Fearing lest it be adopted, or lest, in the event of its rejection by Great Britain, a separate Anglo-French understanding be reached, the German Foreign Secretary, Dr. Stresemann, proposed on 9th February, 1925, the conclusion of a Rhineland or Western Security Pact between Great Britain, France and Germany. His object, as he defined it secretly to the Foreign Affairs Committee of the German Reichstag, was " to insert a German initiative into the situation." Neither Mr. Austen Chamberlain nor M. Herriot received this proposal very warmly. But M. Herriot's successor, the late M. Briand, presently took it up and, with the active co-operation of Great Britain and Italy, negotiated the Western Security Pact and the treaties of arbitration which were initialled on 16th October, 1925, at Locarno and signed in London in the following December. This Western Security Pact was the nucleus of the whole " Locarno " settlement which was hailed as opening a new and more hopeful era in European affairs. Germany and France undertook to respect the territorial position in Western Europe, and never to attack each other, while Great Britain and Italy guaranteed this undertaking.

THE LOCARNO PACT

We know to-day much more about this Locarno Settlement than was known at the time of its conclusion or than anybody really knew five years ago. For one thing, we have had the three German volumes of the late Dr. Stresemann's *Testament*, of which only one has yet been published in English. The second of these volumes, of which the first two appeared in 1932, throws a curious light upon the spirit in which Dr. Stresemann approached the Western Security Pact and the arguments he used to make it—and the entry of Germany into the League of Nations which was a condition of its validity—less unpalatable to his fellow-countrymen. In particular the letter, or memorandum, which he addressed to the former German Crown Prince in September, 1925, on the eve of going to Locarno, may long remain a subject of controversy, for it contained a definition of German foreign policy " in the immediate and calculable future " that would have been likely to upset the whole Locarno Conference had M. Briand or Mr. Austen Chamberlain known of it at the time. This memorandum, or letter, which Stresemann wrote on 7th September, 1925, laid down as an aim of German policy " the rectification of our Eastern frontiers : the recovery of Danzig, of the Polish Corridor, and a revision of the frontier in Upper Silesia " ; and it pointed out that though the Security Pact " carries with it renunciation of a fight with France for the recovery of Alsace-Lorraine," it would be a renunciation " theoretical only inasmuch as there is no possibility of making war upon France." It argued that England wanted Germany to come into the League " so as to counterbalance the overwhelming influence which France has hitherto possessed in it." By entering the League, Dr. Stresemann went on, " the question of choosing between East and West is not raised. Besides, one can only choose if one is backed by military might. Unhappily, we lack this might. We could never become England's continental sword, as some imagine, nor can we go in for a Russo-German alliance. . . . That we should be ready to come to an understanding, on another basis, with the Russian State (in whose evolutionary development I believe) and that we should certainly not sell ourselves to the West, are matters of fact about which I should be glad to tell Your Imperial Highness more, by word of mouth, as occasion may offer." In its penultimate paragraph Dr. Stresemann's memorandum said significantly : " The great movement which is now running through uncivilized peoples who are turning against the colonial rule of Great Powers, will, I believe, not be influenced in a way detrimental to these peoples by our entry into the League. But our weightiest task is the first I have mentioned—to free the German land from foreign occupation. We must first get the strangler's grip off our throat."

The publication of this document in Dr. Stresemann's *Testament* made a great noise in Europe—though not in this country, for the very good reason that the British Press kept it dark. While French feeling became indignant, and opinion in Poland, and in other States bordering on Germany, was violently excited, somebody in official quarters here seems to have counselled British newspapers to hush the whole thing up. An English edition of Stresemann's *Testament* which was expected to be issued promptly, did not begin to appear until September, 1935, when the first volume only was published, that is to say, the volume which does not contain the famous memorandum. I refrain from comment except by asking how it is possible for this country to pursue a sound foreign policy, with enlightened public approval and support, if important documents of this character are withheld from its knowledge?

More was to come—more, too, that throws some light upon the spirit in which "Locarno" negotiations were prepared and pursued on the German side. In November, 1932, Sir Austen Chamberlain referred in the House of Commons to the difficulty he had found in ascertaining Dr. Stresemann's real intentions. He said that at an early stage of the negotiations for the Western Security Pact he had stated to the House, on 24th March, 1925, that, if he understood the German proposals rightly, Germany was prepared voluntarily to guarantee what until then she had accepted under the compulsion of the Peace Treaty, that is, the *status quo* in the West; and that she was prepared to eliminate, not merely in the West but in the East, war as an engine by which any alteration in the Treaty position was to be obtained. Thus, not only in the West but in the East, Germany was prepared absolutely to abandon any idea of recourse to war for the purpose of changing the Treaty boundaries of Europe. She might be unwilling or unable to make the same renunciation of the hopes and aspirations that some day, by friendly arrangement or mutual agreement, a modification might be introduced into the East, which she was prepared to make in regard to any modification in the West. [I need hardly remind you that the *status quo* in the West then included the Rhineland demilitarized zone defined by Articles 42 and 43 of the Versailles Treaty, and that it was proposed to re-affirm these Articles in the Western Security Pact.]

Hardly had Mr. Austen Chamberlain made this statement to the House in March, 1925, when he was told that the German Ambassador in London urgently desired to see him. The Ambassador informed him that the statements just made in the House went beyond anything authorized by the German Government. Mr. Austen Chamberlain asked whether the Ambassador meant that the German Government reserved the right to use force as a means of changing Germany's Eastern

frontiers; and added: "If that be so, I have indeed misunderstood you, and there is but one thing for me to do. I must go back to the House . . . and say that I had misunderstood your proposals and that the whole situation must be reconsidered." Since the German Ambassador could not say exactly what his Government's claim was, the Prime Minister, Mr. Stanley Baldwin, forthwith repeated the substance of Mr. Chamberlain's statement to the House and caused the two statements to be telegraphed to Berlin with an enquiry whether they went beyond the intentions of the German Government. Under this pressure Dr. Stresemann confirmed the accuracy of the British statements.

United States Reactions

This may now be ancient history. But as it was revealed for the first time in November, 1932, it has some bearing upon the spirit in which the Western Security Pact was being negotiated by Germany nearly six months before Dr. Stresemann's memorandum to the German Crown Prince. To-day we are apt to forget the hopes which "Locarno" inspired in Europe and throughout the world: Mr. Austen Chamberlain was given the Garter on the strength of it; it influenced American feeling so profoundly that a powerful movement in favour of joining the League of Nations sprang up in the United States. This movement was checked by disgust at the wrangle over the re-allotment of seats in the League Council which arose in March, 1926, during the Special Assembly convened for the purpose of admitting Germany to the League. In consequence of the wrangle Germany was unable to enter the League until the ordinary Assembly in the following September. These movements of American opinion were nevertheless significant. They showed that the key to American participation in the search for security against war lay, as perhaps it still lies, in the degree of harmony that can be attained among the major States of Europe in ostracizing war. Not until the autumn of 1935 was any similar movement again noticeable in the United States. Then, after Sir Samuel Hoare's speech to the League Assembly, it gathered such volume and momentum that American co-operation with the League for the purpose of restraining Italian aggression in Abyssinia would have been of very practical efficacy had not it been checked once more by the Hoare-Laval proposals at the beginning of December. Moreover, as is conclusively shown by the documents published in Mr. Henry L. Stimson's recent work, "The Far Eastern Crisis," the American desire for co-operation with this country and, indeed, with the League for the purpose of checking Japanese aggression upon China in Manchuria was deliberately thwarted by the British Foreign Secretary, Sir John Simon, in the winter and spring of 1931–32. In these circumstances it is not altogether strange that

American and other foreign critics of British policy should think they detected some inconsistency, and even some lack of sincerity, in British refusals to join in any collective guarantee of security against war on the plea that the United States might claim neutral rights and invoke the " freedom of the seas " against Great Britain and other League members who should seek to enforce such a guarantee.

A Crucial Clause

But to return to " Locarno " which, despite its violation by Herr Hitler last spring, and present doubts of the Anglo-Franco-Belgian defensive agreement that succeeded it, still haunts official minds. The Western Security Pact of 1925, in its " Locarno " form, is now quite dead ; and I, for one, do not regret it. I have long looked upon this main Locarno Treaty as an extremely ambiguous and dangerous instrument, and as being likely to hamper rather than to help the search for security against war which it was apparently designed to facilitate. One reason for my distrust of it was that it placed Great Britain under what most people took to be definite obligations while leaving the Dominions and India exempt from those obligations. Another reason was that the text of its crucial clause was so strangely drafted as to leave room for legitimate differences of opinion upon the moment and the manner in which those obligations would have to be fulfilled by this country. In the English text, which is not authoritative since it was agreed that the French text should govern all questions of interpretation, the first part of this clause runs :—

> " In case of a flagrant violation of Article 2 of the present Treaty or of a flagrant breach of Article 42 or 43 of the Treaty of Versailles by one of the High Contracting Parties, each of the other Contracting Parties hereby undertakes immediately to come to the help of the Party against whom such a violation or breach has been directed as soon as the said Power has been able to satisfy itself that this violation constitutes an unprovoked act of agression and that by reason either of the crossing of the frontier or of the outbreak of hostilities or of the assembly of armed forces in the demilitarized zone immediate action is necessary.

This seems to read as though each of the other Contracting Parties (that is, chiefly Great Britain and Italy as guarantors of the Treaty) undertook to come to the help of the aggrieved party as soon as it—the guarantor Power—had been able to satisfy itself that an unprovoked act of aggression had occurred and that immediate action was necessary. This, indeed, was the interpretation placed upon it by the British

Government and by Sir Austen Chamberlain himself. But the French text, which is authoritative, leaves room for doubt whether the " said Power " was not meant to be the aggrieved party, and whether that party was not entitled to call upon the two guarantor Powers as soon as " it " had satisfied itself that immediate action was necessary. On this point I had some friendly controversy with Sir Austen Chamberlain in the columns of *The Times* last March, immediately after Herr Hitler had violated the main Locarno Treaty by sending troops into the demilitarized zone. At Sir Austen's suggestion that I should look more carefully into the French text, I did so, and also consulted one Italian and two French legal experts on the proper interpretation of it. They agreed with what I thought its obvious meaning—according to accepted rules of grammatical construction and interpretation—that " the said Power," or *ladite Puissance*, referred to the aggrieved party and not to " each of the other Contracting Parties." This, I understand, was also the French official view of the clause in question.

It follows that if, last March, France had taken the view that the German " assembly of armed forces in the demilitarized zone " was an act of aggression rendering immediate action necessary ; that, had she then called upon us to fulfil our obligation as defined by the French text ; and that, had we then failed to follow her call on the ground that we had not " satisfied ourselves " that immediate action was necessary, the effect upon Franco-British relations, and upon the European situation, might have been disastrous. Very fortunately, the French Government did not thus call upon us. Had it called upon us the British Government, in the circumstances of the moment, would almost certainly have refused to obey the call, and its refusal would have been supported by British public opinion. Why this would have been so is a question that bears directly upon the search for security against war of which the Locarno Settlement was long extolled as a major achievement.

NEGLECT OF BRITAIN'S FIGHTING SERVICES

Before going into this especial point I wish to express the amazement and the anxiety with which my mind was filled whenever responsible British statesmen declared, between the years 1931 and 1935, that, while we could not and would not contract any general obligations in the name of collective security, other than those implied by our membership of the League, we were determined to fulfil precise and limited commitments like those involved by the Western Security Pact or main Locarno Treaty. These declarations had a fine ring about them. They seemed to reflect the proud British principle that, while not promising more than we were determined to perform, our word—that is to say our performance—would be better than our bond. Yet all this

time we were allowing our forces on land and sea and in the air to fall to so low a level that we could scarcely have made good our Locarno commitments had we wished to fulfil them, and we were obstinately closing our eyes to the secret rearmament of Germany which was making it progressively harder for us to fulfil them. If this was British good faith, I fail to understand the meaning of that term. Here I speak with some personal knowledge. In the early spring of 1934 information reached this country of the alarming lengths to which German rearmament was going : it came from several sources ; some of it was given to me in a form and through channels which put its authenticity beyond question, and I conveyed it to official quarters. All this information was frowned upon, belittled and ignored. Only with the greatest difficulty did I succeed in making part of it public. The leading organs of our Press, not without official inspiration, derided the idea that German armaments could imply any threat to the security of Western Europe, at any rate. In the autumn of 1934 the Prime Minister, Mr. Stanley Baldwin, assured the House of Commons that we still possessed a considerable margin of superiority over Germany in the air ; and in February, 1935, Sir Philip Sassoon, the Under-Secretary of State for Air, repeated this assurance. Yet at the beginning of April, 1935, our Foreign Secretary, Sir John Simon, was bluntly informed by Herr Hitler in Berlin that Germany was already stronger than we were in the air, and was told that the dimensions of her military programme were much larger than we had ever dreamed. In the following August we were hastily manœuvred into concluding with Germany a naval agreement which, while ostensibly limiting German naval strength to 35 per cent. of our own, made Germany a present of naval supremacy in the Baltic and allowed her, at her own discretion, to build submarines up to 100 per cent. of our own submarine strength.

ANGLO-GERMAN AMENITIES

The British public was left in comparatively blissful ignorance of these things. But other countries, especially France, who were even more interested in security against war than we were ourselves, took heed of our curious behaviour, decided that we were hardly to be counted upon, and made arrangements of their own. One of these arrangements was the Franco-Italian agreement of January, 1935, by which M. Laval, then Foreign Minister, is understood to have given Signor Mussolini a free hand against Abyssinia on condition that Italian troops should no longer threaten the South-Eastern frontiers of France. Of this arrangement we were to learn the true import before the end of the year. The process of which this arrangement was the culminating point had begun much earlier. It had sprung from a mistaken British conception of

German aims. Attempt after attempt was made to secure hearty German co-operation in what was called " the organization of peace " by removing what were felt to be intelligible German grievances. In 1930, the last of the Rhineland zones under French occupation was evacuated five years earlier than the date fixed in the Peace Treaty. This was done in the belief that Germany would feel and would show gratitude for so considerable a concession. As might have been expected, the exact contrary happened. Germany showed, not gratitude, but defiant exultation. In June, 1932, the last vestige of Allied reparation claims upon Germany was practically abandoned at the Lausanne Conference, the assumption being that Germany would then " play up " both in the Disarmament Conference and as an equal among Great Powers bent on peace. Again, the assumption proved wrong. In December, 1932, at Geneva, Germany was formerly granted " equality of status " on certain conditions which were destined to remain unfulfilled. This was before the advent of Herr Hitler and of Nazism to power. Simultaneously, sundry members of the British Government and several organs of the British Press showed unmistakable sympathy with German claims for " treaty revision," meaning especially the removal of the so-called " Corridor " which, under the Peace Treaty and in accordance with the terms of the Armistice, gave Poland access to the sea through ancient Polish territory.

These British tendencies created among the smaller nations of Central and South Eastern Europe a belief that Great Britain would be disposed to purchase a respite from war in the West by giving Germany a free hand to revise her boundaries on the East—a belief that was strengthened when, on 16th March, 1933, the British National Prime Minister—Mr. Ramsay MacDonald, suddenly espoused a plan for treaty revision after submitting to the Disarmament Conference at Geneva a table of proposed military strengths for various European countries, and prefaced this table with proposals for " security " which caused the whole Conference to gasp. So astonishing were these proposals that they were speedily replaced by others less extraordinary ; but the impression remained that Great Britain cared little for the security of others against the mutilation of their territories.

These proposals, issued as a White Paper (Cmd. 4279) referred to the Pact of Paris in Renunciation of War (or Kellogg Pact) and declared that any war undertaken in breach of that Pact " is a matter of interest " to all the High Contracting Parties and shall be regarded as a breach of the obligations assumed towards each one of them. So far, so good ! The next paragraph suggested, however, that, in the event of a breach or threat of breach of the Pact of Paris, a Conference between the High Contracting Parties should at once meet at the request of any five of

them, provided that at least one of the seven Great Powers—the United States, Great Britain, France, Germany, Italy, Japan and the Soviet Union—should join in that request, albeit on the understanding that none of the conclusions reached at such a Conference should be valid unless it had the concurrence of *all* these seven Great Powers, and of a majority of the other Governments participating in the Conference exclusive of the parties to the dispute. Then the Conference would decide upon the steps which could be taken, and, should the Pact of Paris be found to have been violated, determine which party or parties to the dispute were to be held responsible. In other words, Mr. MacDonald proposed to enable any Great Power to veto the validity of any conclusions reached by a security conference, if that Great Power were not a party to the dispute ; and, on the strength of the " security " thus provided, the various Powers and the smaller States were to accept the British schedule of their armed forces. One is tempted to ask whether Mr. Ramsay MacDonald and Sir John Simon really believed that " security " of this sort would or could be taken seriously by any single Power ; and if so, what we are to think of their wisdom.

THE FOUR-POWER PACT

The same questions are warranted in regard to their subsequent conduct. Both of them suddenly flew from Geneva to Rome where they received from Signor Mussolini the draft of a Four-Power Pact which had been previously concerted between Signor Mussolini and Herr Hitler. Whether or not the British Ministers knew the nature of this Pact before they hurried to Rome has never been precisely ascertained. If they did not, they could scarcely be absolved of imprudence in making a demonstrative visit to the Italian Dictator on the principle of " open our mouths and shut our eyes and see what he will send us." If they did, they can hardly be excused for not having understood that a scheme or, to give it its right name, an intrigue, such as that which the draft Four-Power Pact represented in its original form, could not fail to disorganize Europe and to increase the danger of war. On his return to London, Mr. Ramsay MacDonald did, indeed, " hedge " to the extent of telling the House of Commons that further details of the plan would have to be worked out " so that the plan may not merely have as its general purpose peace, and its big and almost only detail, revision of treaties." But he added : " If the four Powers came together, if a way could be devised for joining with their views those of the smaller nationalities concerned, and for examining the causes of fear leading now to an unwillingness to disarm, who would dare to deny but that the most effective work for peace which had been done since the War will have been accomplished ? That may well have been begun by the

Italian plan." This was said in the House of Commons on 23rd March, 1933. In due course Mr. MacDonald and Sir John Simon were officially informed by M. Titulescu, as special ambassador of the Little Entente, that " treaty revision means war." They may or may not have known —and if they did not know their information was singularly at fault— that Signor Mussolini had been careful to assure Poland, Czechoslovakia, Yugoslavia, and Roumania, separately, that the Four-Power plan for treaty revision was not directed against the particular State with whose representative he was conferring, but only against the others; and that when the recipients of these several assurances met and compared notes, they jointly and unanimously drew conclusions the reverse of flattering to Signor Mussolini's straightforwardness.

Events then moved swiftly. Poland delayed the appointment of a new Ambassador to Rome; and the French Foreign Minister was officially reminded by Dr. Beneš, in the name of the Little Entente, that while France was at liberty to sign any new pact or treaty she might deem conducive to her interests, she would cancel her signatures to her treaties of alliance with Yugoslavia, Roumania, Czechoslovakia and Poland by the same stroke of the pen as that with which she would sign the Four-Power Pact. Consequently the Pact had to be remodelled, after the French Government had addressed to Poland and to the countries of the Little Entente, and had communicated to Great Britain, Germany and Italy, a letter declaring that the Four-Power Pact could in no way infringe or otherwise enfeeble the alliances between France and those countries by which France bound herself to uphold their territorial integrity. Of these developments the British Press said little or nothing.

Nor was this all. The late Marshal Pilsudski, understanding that the Four-Power Pact proposal had been directed chiefly against Poland, bluntly inquired of Herr Hitler whether Germany wanted war at once or in five years or in ten, and added that she could have it at once if she wanted it. Hitler understood this language, said he did not want war, and shrewdly negotiated a Polish-German agreement for peace and friendship during the next ten years on the secret understanding that Poland should not make common cause with the Little Entente or conclude any agreement with Czechoslovakia, and should maintain friendly neutrality towards any action which Nazi Germany might undertake against Austria.

The reason for the latter condition soon appeared. After Herr Hitler had " cleaned up " his opponents in Germany on 30th June, 1934, sending the former Chancellor, General von Schleicher, and well-nigh 1,200 others to a better world, a Nazi Putsch was organized in Austria,

and the Austrian Chancellor, Dr. Dollfuss was murdered—an announcement of the impending action, with photographs of the dead Chancellor, having been distributed from Nazi press headquarters in Berlin two days before the event. Italy and Yugoslavia at once prepared to intervene in Austria against German occupation, and eventually against each other. During the summer and autumn of 1934, Europe trembled on the brink of war, Such were some of the consequences of the British attempt to seek " security " by the proposals submitted to the Disarmament Conference and by British endorsement of the Four-Power Pact.

Meanwhile, in October, 1933, Hitler had announced the withdrawal of Germany from the Disarmament Conference and from the League of Nations, alleging that Germany was the victim of unjustifiable and humiliating discrimination against her people who had not been granted equality with others.,This action was plainly inspired by the fact that Germany had already begun to rearm on a scale wholly incompatible with the success of any Disarmament Conference, and that she was determined to pursue the policy which she has since carried through, with undeviating purpose, at enormous cost.

ITALY AND ABYSSINIA

In these circumstances the British Government found itself seriously embarrassed. As long as it could, it declined to admit in public the reality of German rearmament and began to lay stress upon the value of collective security against war. More than once, cryptic references to collective security were to be found in the Prime Minister's speeches. But by this time France, as we have seen, had begun to think of getting security for herself on other lines. The Laval-Mussolini agreement of January, 1935, and the military convention which accompanied it, gave Italy, to all intents and purposes, a free hand against Abyssinia in return for the transfer of Italian troops from the Italo-French to the Italo-Austrian frontier, where they might serve to deter Herr Hitler from further attempts to absorb Austria. Then Signor Mussolini informed the British Government, more or less vaguely, of his plans against Abyssinia. No warning seems to have been given him by Sir John Simon that these plans would be viewed with disfavour in this country; nor was any mention of the matter made during the Anglo-Franco-Italian Conference at Stresa in April, 1935. The Italian note or memorandum of January was referred for consideration to a British Departmental Committee which reported in July that, from the standpoint of British interests, it would matter little whether Italy or Abyssinia were in control of Ethiopian territory. During the summer Mussolini continued his preparations and sent large bodies of troops and

immense quantities of stores to Eritrea. Incidentally, he built a strategic road leading to the frontier of the Anglo-Egyptian Sudan. When the League Assembly met in September the new British Foreign Secretary, Sir Samuel Hoare, made his famous speech in advocacy of collective security and declared the readiness of Great Britain to support collective action against eventual aggression. The world was electrified. British prestige mounted high. The nations of the League rallied under British leadership. Now, at long last, it was felt, collective security would become a reality. After its failure to check Japan in the Far East, the League would now check the aggression of a great European Power against a small and weak African member. Throughout Africa, Asia and the East, peoples were on tiptoe. In Europe the belief gained ground that, if Italy could be called to order, Hitler also would learn a lesson. Thus the long search for security against war might end in triumph, and a real measure of disarmament be brought within sight. These hopes were widely shared in Great Britain and also in the United States. Largely on the strength of them the British National Government retained a handsome majority at the General Election in November.

Then, early in December, came the Hoare-Laval proposals for buying Italy off from the war she had begun in October by giving her more than half of her victim's territory. A wave of national indignation drove Sir Samuel Hoare from office and shook the victorious Government to its foundations. The wretched sequel is too fresh in our memories now to need recapitulation. British prestige throughout the world fell more rapidly, and farther, than it had risen. Rightly or wrongly we were believed to have quailed before Mussolini's threats to attack us in the Mediterranean, in Egypt, and in the Sudan, and to have engaged in a portentous piece of bluff which Mussolini had shown up. This belief was not enfeebled by the lead we took at Geneva in proposing that " sanctions " against Italy be dropped, as soon as she had carried Roman civilization to Addis Ababa with bombs and mustard gas, or by the more recent attempt of the British and French Foreign Secretaries to get the delegates of Abyssinia excluded from the League Assembly this year on the technical plea that they no longer represented a recognized Government. Against this mean proposal the League Assembly revolted last month in a spasm of shame and despair. People are now asking whether it was a death spasm.

THE DISRUPTION OF COLLECTIVE SECURITY

Why were we exposed to this series of humiliations and to discredit so vast? Because, some may say, France failed to stand by us. When, at last, a British Government proclaimed its adherence to the

very principle of collective security which French Governments had consistently invoked, and to which British Governments had as consistently demurred, France paid mere lip service to it. She preferred, in practice, the favour of aggressive Italy to solidarity with a regenerate Great Britain. Why did she thus " let us down " ? Why did the leading organs of the French Press, especially those influenced by M. Laval, criticize and oppose British policy in terms reminiscent of the years before the Entente Cordiale of 1904 ? The answer can only be that a country like ours cannot demur to a principle, like that of collective security, for fifteen years and then suddenly invoke it with any certainty of commanding general belief in our unselfish sincerity. And to this answer may be added the corollary that, if a country like ours allows its defensive forces to sink to a level at which it could not easily fulfil such local engagements as it has made to safeguard the security of others, it must not be surprised to find that those others look for security in a different direction.

Our own people did not fully understand these things at the time. They hardly understand them now. They resented the behaviour of France and the unfriendly language of the most influential organs of the French Press. Thus it came about that when Herr Hitler, seeing the deep estrangement of British from French feeling, tore up the Locarno Treaty and marched troops into the demilitarized zone, his action was almost applauded in Great Britain and was, indeed, applauded in more than one widely-read British newspaper. France—so ran the feeling—had " asked for it " and had " got it." After all, was not Germany's action " quite natural " ? And if France should call upon us to implement her reading of the main Locarno Treaty or to impose economic " sanctions " against Germany, must not our answer be that we had not " satisfied ourselves " that immediate action was necessary, and that, since France had boggled over serious economic sanctions against Italy who had broken four or five treaties and had actually made war, we were not going at her behest to impose economic sanctions upon Germany who had merely broken a couple of treaties without making war ?

Luckily, things did not quite come to this pass, though they came near it. We declined to contemplate economic sanctions against Germany, but we did recognize that her action had transformed our Locarno obligations into an Anglo-Franco-Belgian defensive understanding—an understanding which the tardy rearmament programme of our Government was gradually rendering us less unable to uphold. (Now even this understanding is called in question by the latest departure in the policy of Belgium.) Meanwhile the policy of France under M. Laval had killed something in England. It had killed our fond belief

in the sincerity of French devotion to the principle of collective security against war—a principle to which we long refused support lest France interpret it too absolutely, though with the confident assumption that, on the day when we should adhere to it, we should find ourselves working hand in hand with France. I am not sure that our disappointment at finding this belief unfounded has not killed the principle of collective security itself and has not condemned us to seek, either in isolation or in conditional regional alliance with other countries, some safeguard for our own security against attack. However this may be and whatever surprises or dangers the future may have in store for us, I can only conclude that the search for security against war which we imagined that we were helping to conduct has, for the present, ended in failure; and that unless it be resumed on other lines, with deeper sincerity and greater readiness and ability to meet the dangers which it may involve, we shall be entering, if we have not already entered, one of the most critical periods of our long history.

DISCUSSION

ADMIRAL SIR WILLIAM GOODENOUGH: Mr. Wickham Steed has shown quite clearly the impressions which the history of the last ten or fifteen years have made upon him. I do not know that those of us who have been brought up entirely to the profession of arms are the right persons to take part in a discussion of this kind. It is our business merely to prosecute successfully, if we can, the wars which are brought about by, as we may glean from what Mr. Wickham Steed has said, the follies of Governments—and it seems from his opinion more particularly brought about by the follies of our own Government.

I thought I was going to hear something from Mr. Wickham Steed, with his great experience, on how we are to be secured in the future from war; but, if I allowed myself to leave with the impression which Mr. Wickham Steed has given us, I should be left in a state of extreme depression. It seems to me that what he has dealt with is the security of each individual nation in war, and the success in war which they would try to get by the way they carried out their policies. Only in his last sentence did he say something to the effect that unless there was a new spirit brought into this business there did not seem to be much hope.

He told us of the terrible mistakes that have been made, but he has not given us any hope for youth in the future—and that is what we want.

I would say: "Trust more to youth with their lives before them; and let us have something of the same sort of belief in other people's words nationally as we have in other people's words privately"; for it was quite evident to me from what Mr. Wickham Steed said that neither he, nor did he think anybody else, had the slightest trust nationally in anybody else's word.

COMMANDER CARLYON BELLAIRS, R.N.: I so profoundly disagree with the aims of our distinguished lecturer that I am very glad indeed to find three points of agreement. One is his condemnation of the Locarno Pact; the other is his reference to the disarmament of this country placing us in a position in which we could not carry out our obligations; and the third is with reference to the Four-Power Pact.

In regard to the Locarno Pact, the House of Commons was practically unanimous; at any rate those of us who demurred could not get into the debate. There is an old saying that when the House of Commons is unanimous it is always in the wrong—that could easily be proved, but I would have to travel far to do it.

In regard to the disarmament of this country, it is of course well known that the successive Governments had given orders to the different War Departments that they were not to contemplate a first-class war for ten years. They selected that period on purpose, because the Chiefs of Staff would naturally retort, "It takes us ten years of preparation for any given policy—to train up officers and men, and so forth." Mr. Duff Cooper and others have repeatedly put forward a theory that if there is an European war we are bound to be in it, and he even went so far as to say that it has always been so in history. That statement is not correct: it was certainly not correct in regard to the Franco-German War of 1870; and we could easily have avoided the Crimean War. Another point is this—that we often base ourselves on the promises of other Powers. We believed when we went into the Crimean War that we had got the promises of three other Powers, besides France, to assist us. It was the same in regard to France in the Franco-German War: the French Foreign Minister said there was a promise on the part of both Italy and Austria that they would go to the assistance of France; but it did not materialize. In the matter of the Abyssinian conflict we had the greatest difficulty in pinning France down to a promise to come to our assistance if we were attacked, and when she had given that promise, I believe I am correct in saying that she sent her fleet to manœuvre off Dakar, on the West Coast of Africa—that would have been a lot of assistance to us in the Eastern basin and in the Mediterranean! I believe that Mussolini's orders would have been simply these: "Fight neither with great nor with small; save only with the King of Israel"—and the King of Israel would have been the British Fleet. How, then, would we have been giving security to ourselves if we had, as the result, lost one or two of the few battleships we were permitted to have under the Washington Treaty?

What we have to do in the future is to pursue a purely British policy. I think it is too great a demand to make on the British tax-payer that he should be called upon to guarantee the safety of other nations in Europe. It was Lord Rosebery who warned us, when we first guaranteed France in Morocco, that whenever there was an European war in which we were involved, the European nations would expect us to pay the piper.

COMMANDER W. B. C. ROSS, R.N.: Sir William Goodenough rather reproached the Lecturer for not being more definite as to how this problem of security can be faced successfully. I suggest that the answer is implicit in Mr. Wickham Steed's lecture: he referred to Article 8 of the Covenant and to Lord Cecil's remark, "The price of disarmament is security"; he might have added, "The price of peace is security"; he drew a very clear picture of how, since we signed that Charter of international law and order—the Covenant of the League, the British Government, in whose hands the political leadership of modern Europe inevitably rests, has refused to take it seriously, and has refused to get it developed into a real instrument of security; and that is the reason of the present situation which we have to face.

If we want security we have to pay the price. The only practical road to law and order on earth, is to surrender the necessary degree of sovereignty to central authority at Geneva, and place behind it an overwhelming armed force. France has suggested this three times, making definite proposals to dedicate armed forces to the League. That was implicit in Mr. Wickham Steed's speech, and I do not think it quite fair to say that he did not hint at a solution.

Commander Bellairs seems to advocate isolation. We have not been isolated ever since the ancient Britons invaded these islands, and I suggest that our non-intervention in 1864 and 1870 were the direct causes of the war in 1914.

CAPTAIN A. C. DEWAR, R.N.: Commander Ross entirely ignores the fact that every nation has its own interests. Those who argue as he does seem to have forgotten everything we used to hear before the War; yet we had a great period—a whole century, of peace: surely the men of that generation were not entirely wrong. We were told then that war is merely a continuation of policy by force. That is a truism; but it may be true.

What is to be this new "Commonwealth" at Geneva to which we are to give our Forces? Are our Navy, our Army, and our Air Force going to fight for it? I do not believe for a moment that the men and women of this country are ready to join such a Commonwealth. If we send our Services to fight for others we mortgage them to a policy which may not directly concern us; then when some crisis which is vital to us arises—perhaps in Palestine or in Australia, where is the Force that you talk about—it is already mortgaged, and we are powerless. We must be able to decide our own policy—a policy which we can control; we cannot control the policies of all Europe.

Again, what is the meaning of this word security: do we mean security for victory or security for peace? If it is security for peace, then surely it would require an overwhelming force to impose peace on any two warring Powers? If this "Commonwealth" authority is going to keep the peace of the world without fighting, it will have to have available a force of such overwhelming superiority that no Power or combination of Powers would dare to challenge it. On the other hand, if we are going to secure peace by means of war, there is great likelihood of that leading to a long series of wars—like the Hundred Years' War. Our policy is a policy of peace, and we can only give effect to it by being prepared for war.

But why all this nervousness about war? To-day is Nelson's day: he did not think like that; he would never have advocated giving Geneva all our Army and all our Navy. It is extraordinary where these ideas come from. Have we found any greater security now with all the talk of collective security than we had during that century of peace and during Queen Victoria's time: I do not think so.

SECOND-LIEUTENANT R. M. P. CARVER, Royal Tank Corps: Before the War there were alliances. Since the War there have been intrigues and Pacts! I should very much like the Lecturer's opinion as to whether or not these Pacts, of which there has been such a vast quantity, can really make us more secure. It seemed, from what he said, that the number of times we have put our signature to these Pacts has really tended to produce war rather than prevent it.

When we were being taught history we were told about a thing called "The balance of power," and given the impression that, as a nation, we sat like that old lady we sometimes see who is blindfold with a pair of scales in one hand and a sword in the other, not quite able to make up her mind which way to tilt the balance. We are still blindfold, and unfortunately we have lost the sword.

Does the Lecturer think that if, by means of a large increase in our Fleet and a permanent station at Singapore, we secured the support of the United States against Japan, that the former would be prepared to help us in Europe?

PAYMASTER-LIEUTENANT W. J. DOWDELL, R.N.R.: The Lecturer said that in November, 1935, there was a considerable movement of opinion in the United States towards co-operation in the prevention of war, but that the subsequent

action of Sir Samuel Hoare and of the Government chilled, discouraged, and destroyed that movement. I would like to ask him whether he thinks that movement was of any more real value than the definite undertaking given by the President in 1919 that the United States would become a Member of the League of Nations—an undertaking which was repudiated by the Senate? If that could happen, is it worth while for our Government to attach much importance to such a wave of opinion until it has expressed itself in some much more concrete form than mere speeches, articles in papers, and general expressions of opinion by public men—a form which had taken the shape of action backed up and guaranteed by the Senate and Congress?

He was very severe on our Government for their apparent inconsistencies; but he does not seem to have taken sufficiently into account that they have got to do one of two things—either to carry the Dominions with them in whatever action they take, or to take action in Europe in sympathy with the nations of Europe which will not be supported by the Dominions. In the latter case they might split up the British Empire.[1]

THE LECTURER

Admiral Goodenough's criticism has, I think, been dealt with in part by Commander Ross. Five years ago, when speaking of disarmament I did go into questions of policy, especially in the discussion; but on this occasion, when I was asked if I would deal with the value of the Pacts which had been made and broken during the last five years, I said that the catalogue of such Pacts would be so long that it would take an hour to read and explain them, and that it might be better if I went through the history of the search for security and dealt with it mainly in chronological form, throwing such light on the matter as I could. I fully expected that in the discussion questions like those which have been asked would be asked, and I hope to be able to say something in reply to them.

Admiral Goodenough asked if we are to trust anybody's word. I think the answer is "No"; and I think we should not ask anybody to trust our word. The only basis upon which we can hope to get security against war is in virtue of some principle to which all peace-loving nations will spontaneously subscribe. This principle, I believe, is exactly that upon which law and order in this country are maintained and upon which they have grown up.

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[1] Lieut.-Colonel A. B. N. Churchill, in supporting this speaker, quoted Sir Austen Chamberlain's speech to the League Assembly in 1927. The Lecturer subsequently gave his version of this speech. Both were quoting from memory, and Colonel Churchill has subsequently brought to our notice the authoritative report, which, in the interests of historical accuracy, it appears preferable to quote.

Sir Austen, speaking on a resolution moved by a Dutch representative on 6th September, 1927, advocating more active steps to secure the adoption of the Protocol, said:—

"You do not know what you are asking us. You are asking nothing less than the disruption of the British Empire. I yield to no one in my devotion to this great League of Nations, but not even for this League will I destroy that smaller but older League of which my own country was the birthplace and of which it remains the centre." (Verbatim Record, Eleventh Plenary Meeting, p. 3)—EDITOR.

Law and order in this country are based on the obligation of every citizen to help representatives of the law—the police, the constable or the sheriff's posse, and not to stand aloof or be neutral. English Common Law makes it an indictable offence for all of us if we find the police struggling with lawbreakers and getting the worst of it and do not assist them. What gives us security is that the law expresses the sense of the community which intends to uphold those to whom is delegated the maintenance of law and order. I do not think we shall ever get security against war on any other principle. It is only when we have helped, by example and by readiness to run certain risks, to build up a community sense among nations who wish for peace, that we shall get anything like a police force or a delegation of the powers of an international community to an adequate force.

I do not believe in separate Pacts, except possibly an alliance—offensive or defensive, by which two or more countries agree to strike or to resist together. Such things, so far as we are concerned, belong rather to museums at the present moment.

Commander Bellairs quoted Mr. Duff Cooper as saying : " If there is a European war we are bound to be in it," and argues that we should have a purely British policy. I agree that we should have a purely British policy, including in that policy the Dominions. Let us look at the chances of a purely British policy. Suppose we recognize that the League Covenant, collective security, and all those sort of things, have gone to the Devil ; that it is none of our business if the Germans attack France or Russia or Central Europe ; that it does not concern us. Suppose we say : " let us keep out. If Belgium likes to revert to her neutrality, all the better : that protects us. The Channel ports—Zeebrugge, Dunkirk, Calais, Boulogne, and Havre, are no longer in danger. Why should we bother ; " That is a point of view of which we shall probably hear a great deal more in the coming months. Let us look at it.

The speech of the King of the Belgians last week is important if only because it shows a sort of reversion to the pre-war condition of things—individual neutrality ; and we may take it as an axiom that, just as there can be no collective safeguard or security against war without the abrogation of neutrality or the right to be neutral, so the affirmation of neutrality inevitably means war. I think you can lay that down as an axiom of present international politics. I am not in the secrets of the Belgian Government or of the Foreign Office, but I think anyone who has studied carefully affairs in Europe for the past few years must have drawn a conclusion from that Belgian departure. One can see that there have been the Flemings working up a kind of Flemish Fascist movement—some of the Belgian clericals are on the same lines ; anyhow, there is the prospect of serious internal trouble in that country if anything like the modified Locarno arrangement were carried out. So Belgium feels, on the whole, that it would be better to be neutral. Do you think it improbable that Germany has not been as well informed of what was going on in Belgium as we were, or as the French were ? I think, also, it is very improbable that the Belgium decision was taken without some assurance from Germany that, if Belgium were to revert to neutrality, she would be in no danger of attack by Germany in the event of an European war in the West. That is, of course, an assumption ; but what would it mean if that assumption were true ? It would mean that the acute apprehensions of the Swiss General Staff, which were shown in the summer and autumn of 1933 and have since found material expression in the preparation of certain Swiss defences, are probably not unfounded, and that, when Germany strikes in the West next time, she will begin by striking through Basle, Geneva, the Jura, towards Lyons, St. Etienne and Le Creusot in particular. I

have particular reasons for thinking that the Swiss apprehensions are justified, and for thinking that Germany, with her motorised divisions and her new guns and her powerful air force, believes that an advance through Swiss territory need not take very long. She may be wrong—she thought the same about Belgium in 1914; still, there are obvious advantages for a decision of that kind on the part of the German General Staff—and they would be these: the chief political objective of German policy at this moment is what it was in 1914—to make sure of British neutrality, if not British good-will, in any European conflict. The Germans moved heaven and earth in 1913 and 1914 to do that; they nearly succeeded, and because they succeeded so nearly, we got the European War. If you will read the German and the Austro-Hungarian official diplomatic documents you will see that it was not until after we had concluded with Germany the Bagdad Railway Agreement in 1912, after we re-conditioned and initialled the treaty for partitioning the Portuguese colonies in 1913–14, and had sent the fleet to Kiel as a sign of friendship in June, 1914, that an emissary was sent from Berlin to Vienna to tell the Austro-Hungarian Government—he was sent before the assassination of the Archduke—"We are so certain that England will not intervene that you can go ahead quick." Our part of the war guilt was that we did not say in advance what we should and must do. We knew the Germans were going through Belgium: Lord Haldane knew it from 1906 onwards, and the Government knew it.

There would be obvious advantages—for Germany—to-day in a German promise to Belgium that she would not be touched. First of all, a German stroke at the centre of France, cutting through to Lyons and so on and turning the fortresses of Belfort and Besançon, would not disquiet England so much as another stroke through Belgium or a German seizure of the Channel Ports. Therefore the chances would be very considerably increased of Great Britain remaining neutral until a surprise attack had been made on France, accompanied by perhaps 2,000 aeroplanes over Paris, and so on; until, in fact, the damage was too great for us to repair. We would then keep out of it, as some people think we ought to remain out of it in any case. What then happens? Do you think Germany is going to attack on the West before she has made up her mind about the East? What would be the object of a swift attack on France: to knock her out, to make perhaps a generous treaty, then to switch German forces back to the Eastern frontier, occupy the Baltic States, perhaps invade part of Poland, and be ready for the great war with Russia. In any event, whether war with Russia came or not, the idea would be to establish German rule over Europe from the North Sea right down through the Balkans and to the end of the Mediterranean—that is to say, the subjugation of Europe, and all the more complete because France would then feel that she had been left in the lurch, and would not be particularly well disposed towards us. We should have made ourselves accomplices in that subjugation; and after the re-organization by Germany of a Europe thus subjugated, we should have the choice, at 15 minutes air distance from the Continent, between fighting single-handed or giving up anything that Germany might ask us to give up. I submit that it would be fatal for us to become accomplices of that operation.

Now, how about the Dominions? I hope some of you heard the very impressive broadcast from Canada the other night on this particular point by Professor H. L. Stewart. He described how people in Canada were terribly bewildered and bothered. They had placed all their hopes in the League of Nations, and they had seen it gradually diminish in authority and in efficacy, and they were wondering what they ought to do if the League should be entirely discredited; and he said approximately, "I think then that, if Great Britain were involved in a war, Canada would

still feel that she ought to stand by the Mother country, as she has twice before; but I am not at all certain that the general tendency of our mixed population would not be towards isolation and seeking closer relations with the great Republic to the South of our border. The only thing that could ensure Canadian support is another attempt faithfully to carry out the implications of those treaties which all the Dominions and Great Britain have signed—the Kellogg Pact and the League Covenant."

If we seek a British policy without taking into account a basic principle round which all the Dominions can rally, as upon a moral issue; if, even in this country, we go forward and arm without making it clear to the people that we are arming in support of a moral issue, we shall not get the unanimous support that we want. It was Belgium who gave us that issue in 1914. Short of a direct attack upon us, I do not know where we can get it to-day outside the principles of the Covenant of the League and of the Kellogg Pact.

An international police force was mentioned by Commander Ross: I believe it to be physically and practically impossible to set up an international police force anywhere under the command of somebody and to say that will do the trick. But I do believe that, if we were to propose for adoption by peace-loving nations the principle on which the League itself was based originally—the principle which was partially violated when the United States did not join—that is to say, that there can be no neutrality between the members of the League, and if we stand upon it in conjunction with the Kellogg Pact—which the United States regards very seriously—a basis will have been established upon which the elements of an international police force would be forthcoming, and all the armed forces and the resources of the peace-loving countries would be earmarked for police duty. Instead of having a small force somewhere, everybody and everything would be earmarked for the purpose. The peoples locally interested would do the active local police work with the passive support of the others. I am sure that it is the only principle upon which we shall ever get collective security or anything in the form of a police force.

The question was asked, how to strengthen our nation? You will only strengthen our nation by ceasing to believe that it is composed of cowards, by ceasing to believe that this pacifist or that can appeal to it and get a great response. You will not strengthen the nation if you hide from it the truth. I have been severe upon past British Governments and even upon the present Government, but I defy anybody to say that I have been untruthfully severe. It is because the Government has not told the country what has happened. It has not told the country what it knew. It has muzzled or bamboozled the Press, and we have been living in a conspiracy of silence. In order to find out what is going on one has to read the American and other foreign papers. I believe in putting the country frankly up against the situation as it exists—and it is an appallingly dangerous situation.

Why "dangerous" when Germany wants our friendship? Suppose we refuse that friendship in the form of telling Germany that we are not going to bind ourselves to be neutral, or not to take any steps against war. Let us put ourselves in the position of a Chief of the German General Staff, who says, "We are going to carry out Hitler's programme [it is all outlined in his book, *Mein Kampf*, which we have not got translated]. Who is the real obstacle? Who is the ultimate enemy?" The head of the Berlin General Staff may come to the conclusion that England is the enemy and the obstacle, and he may ask, "Then ought we not to knock England out first?" And that question also is to-day being weighed in Berlin—whether,

by sudden attack, England cannot be knocked out. If that could be done, France might be easier to deal with and the rest of Europe be terrified. It may not come to that but just as there is an " England variant " in the German strategic plans, so we ought to think what is our position and whether we dare refuse whatever suggestions are made to us by Germany. If we refuse—if we say, " Do not count upon our neutrality if you make war," we may be hit first. All these things need to be considered in a complete moral vacuum ; it is no good putting moral ingredients into aggressive strategical thought.

If, pursuing a " balance of power " policy in Europe and throughout the world, we build a strong Navy and make the Singapore base, would the United States, it was asked, join us in Europe ? It is not at all certain, on that basis. I cannot too warmly recommend you to read Mr. Stimson's new book, " The Far Eastern Problem." Our relations with the United States are not merely relations with Pacts, or agreeing to do this, that and the other. The greatest thing ever done in Anglo-American relations, before the War, was when the American fleet in Manilla Bay, at the beginning of the Spanish American War, found British warships between it and some German warships that looked like attacking it. But we have now to think of creating a common principle on which our Dominions and our own people. and eventually the people of the United States, can stand. We have been offered American co-operation—and have refused it. We were begged to take part with the United States in warning Japan that her methods were not those of which we could approve. Twice we declined : that was in 1932. American feeling was very strong last year ; again we cold-shouldered it. In 1932 the Americans said, " Why does not Great Britain stand with us and tell Japan this, and help the people in Japan who do not like the aggressive military policy ? You say you are not strong enough at Hong-Kong ; but our whole fleet is in the Pacific." Our people said, " Oh, what is the good of the American Navy ? " These things are known. You cannot confine your thinking to our own little self-satisfied ideas here. You have to look round the world and see what is thought of us.

We have the power still to lead the world in creating safeguards against war. We have the power to save Europe and ourselves from war. We can do it within the next three months, within the next fortnight if you like. We have only to say, " Let no country that thinks of making war count on our standing out of it or being indifferent," and the whole set of the feathers in Europe will change. But, if we allow any uncertainty to prevail, war will most assuredly come, probably within the next two years. It will be difficult for us to keep out of it except at the cost of becoming an accomplice in the destruction of Europe ; and if we do that, this generation or a future generation may have to take on alone the whole menace of a Europe organized against us.

THE CHAIRMAN :

I have listened to the lecture with very great interest, and also to those who have asked questions ; and I am left with the conclusion with which I started and which I had formed during the last few years, namely, that if we want peace in Europe and in the world one thing is essential, and that is to make the Defence Services of the British Empire sufficiently strong. If you had been in my position during the last three years you would have realized even more than you do now the truth of that statement. There have been three occasions when the three Services were faced with the possibility of being at war at short notice, and none of the three Services were in a position to go to the Government and say, " We can take on this job." In fact, each of the three Services had to warn the Govern-

ment of the serious dangers involved by our unreadiness. That is bound to continue as long as the Services remain weak. Fortunately the country is now supporting the Government and will continue to support it, I feel sure, in their rearmament policy. Most people realize that we have tried to make disarmament work, and we have failed. We have put ourselves in an extremely dangerous position, and the British people are, I believe, now prepared to back the Government in putting the three Services into such a position that if in the future we are faced with another crisis like we have been three times in the last few years we shall be in a position to take the part that this country has been able to take in the past in world affairs.

If Commander Bellairs will allow me to say so, I think he has misunderstood what Mr. Duff Cooper had in mind when he said on several occasions that we are bound to get embroiled in Europe. I think if you take the context you will find that he was referring to the Low Countries. He said that if the Low Countries were in danger we would be bound to come in ; that we should have to do so in our own interests, as we have always in the past—all the more so since the air has gained its present great power. We cannot afford in any circumstances to allow any hostile Power to establish submarine bases on the Coast and to establish air bases in Belgium and in Northern France. That being so, we are bound to go to the assistance of Belgium and France if there is any danger of their being invaded and occupied.

It only remains for me to thank Mr. Wickham Steed very much indeed. He has given us plenty to think about on an extraordinarily difficult problem.

The customary votes of thanks to the Lecturer and Chairman were carried by acclamation.

THE NEED FOR A MINISTRY OF SUPPLY

By Wing Commander G. W. Williamson, O.B.E., M.C., M.I.C.E., M.I.M.E., M.I.E.E., R.A.F. (retired).

MOBILIZATION of industry is a reversal of the machine: a change from peace conditions to war conditions; from financial economy to a policy where money matters less than the lives of fighting men; and a change from "business as usual" to a state of affairs where business must be put on the shelf until the war is over. This reversal takes place immediately on the outbreak of war; the process is longer or shorter, more efficient or less efficient, depending upon the time, the brain-work, and the money which are expended over whatever period of peace may be vouchsafed to us before the crisis is upon us. Without adequate preparation, industry simply cannot be mobilized.

The Mobilization of Industry in 1917.

During the late war, nine months of frantic activity and fabulous expenditure were necessary before the shell shortage was made good. At the beginning of 1917, aeroplane engines were being produced at the rate of a few dozen a month, controlled by a War Office Department containing six officers, one of whom was an engineer. By the end of the year, the same Department comprised 110 officers, all engineers, and double the number of non-technical assistants; and the output was rising towards a figure of 3,000 aero engines per month. That is to say, the organization of industry to produce our requirements of these engines took from August, 1914, until the beginning of 1918, even though money and brains were available in unlimited quantities.

We are the last of the great Powers to embark upon the reorganization of our industrial resources. In 1931, a French writer said:—

"All States have already decided on general mobilization of industry, and constituted councils to draw up plans and keep them constantly up to date."

White Papers and speeches stress the growing armaments of other nations, but little mention is made of the preparedness of their industries.

Germany, like Russia and Italy, has completed her plans for "a contest of material." Not only plans, but the factories are in working order, and for years have been expanding towards a war maximum, producing armaments at an ever-increasing rate; and now that the armament expansion is complete, what is the war machine to do for the future? To a State producing armaments on a war scale, continued peace means widespread unemployment and disastrous financial conditions. Non-totalitarian States, like the United States and France, have also planned their mobilization of industry, but probably without visualizing an armaments slump; nor need that contingency trouble them, for their war expansion has been spread over years. French preparations were outlined in a brief contribution to this JOURNAL in May, 1927; those of the United States in August, 1929; and a lecture in 1934 dealt with the difficulties to be faced by our own country.[1]

THE PROBLEM TO-DAY.

Our expansion, like that of Germany, must be rapid; and our problem is twofold:—

(i) Rapid reorganization of industry.

(ii) Plans to overcome the depression when reorganization is complete.

A wide gulf exists between the co-ordination of defensive Services and reorganization of industry. A joint staff, composed of officers of the three Services, could not handle both subjects; moreover, quite a different type of mind, that of the industrialist, is required for industrial planning as distinct from military co-ordination. It seems obvious, therefore, that another Ministry will have to be formed—a Ministry of Munitions, or, better, a Ministry of Supply.

Each of the three Services has a senior representative responsible for the organization of industrial production, authorized to approach any contractor who could supply his technical needs. But if one of them wished, for example, to organize the supply of five hundred wireless sets per week, he might well find that the firm he selected was already committed to one or both of the other Services. That is exactly what happened in the late war with petrol engines; with a mechanized Army, rivalry may be worse next time. Some master mind must therefore referee between the three Directors of Production; and just as last time the Ministry of Munitions swallowed up all the warring supply departments, so should there now be a Ministry of Supply to embody within itself the supply organizations of the three Services.

[1] "Some Problems of a Technical Service," by the author of this article, published in the JOURNAL of November, 1934, p. 780.—EDITOR.

Peacetime Functions of a Ministry of Supply.

"Mobilization will include everybody"; therefore everybody must be told, in time of peace, what duties will be allotted to them in war. If not, the mobilization of industry will again be a process of "muddling through." France divided her people into administrative districts prior to census and allocation of duties; and decentralization of this kind will be a necessity for the new Ministry, however large. The Department which can plan a mobilization for war should be equally efficient in planning demobilization for peace; and thus we might be saved from the depths of a post-war depression, similar to those of the past. The Government would doubtless lay down the time in which all our preparations must be completed. Five years is more than Destiny may allow us; three years proved insufficient, with unlimited brains and money, to mobilize industry in the late war. Four years is a likely figure for the purpose of planning.

Defence will tell Supply what types and quantities of equipment are required in each year. Supply will advise Defence that a reduction in types, together with simplification and standardization, leads to increased production; and that a graded output, diminishing gradually as the requirement is fulfilled, will ease the problems of cessation of expansion. A design for production, therefore, may be the result of joint planning by the two Ministries. When designs are complete and stabilized, the materials required can be calculated, resources at home and abroad investigated, and orders allocated. In war, priority of Departmental requirements would have to be considered; in peace, it seems likely that pride of place may be given first to Air Force expansion.

The machinery to convert materials into war equipment will be quite insufficient, and this was a limiting factor on output in the late war. Supplies of machine tools must therefore be arranged, and delivery may take as long as nine months. When the machinery becomes available, it is allotted to factories. Last time, new machine tools and increased orders were most frequently allotted to firms which had proved themselves to be good organizers; but in addition, floor space, room for expansion, and proximity of suitably housed labour, must also be considered. The Ministry of Supply would probably consult the Federations in regard to the capabilities of the more important firms; and must then proceed to the awkward problem of the allocation of sub-contractors. The main manufacturer of an aero-engine may require as many as seventy sub-contractors supplying components or accessories; there will be competition for the better class sub-contractors, but the Ministry will not tolerate a price-war, and will therefore have to allocate approved sub-contractors amongst the main contractors.

Both main and sub-contractors will require an allotment of labour, skilled, dilution, and unskilled; and here the trade census will be useful. Equipment must be so designed that it can be made by semi-skilled labour; and mass production means a splitting up of operations until each can be given to unskilled or girl labour. Given diluted labour, any factory can absorb three times its usual complement of hands by working three shifts of eight hours each. Amongst the major difficulties are the provision of managerial, supervision, and inspection staffs in the same proportions, the housing of trebled numbers close to the works, and the heavy wear and tear of machinery running a twenty-four hours day without stops for maintenance and overhaul.

Barracks for single civilians, and houses or flats for married workers, may have to be planned and built close to the works; and this aspect also must not be overlooked by the ubiquitous Ministry of Supply.

War Expansion.

All the above are peacetime problems involved in an expansion of output to about three times its present level; but judging from aircraft requirements in 1918 as compared with our present production, at least a thirty-fold expansion would be needed. A thousand factories—hundreds of them with no previous experience of engine work, turned out 3000 aero engines per month; but engines nowadays are twice as complex and expensive, and aircraft more than three times as complex as those of 1918. Planning must therefore provide for twice or three times the total industrial resources of the late war, and subsidized factories for mass production on the grand scale must be combined with designs that will permit of high-speed manufacture like modern motor cars. From the manufacture of motor cars the labour must be diverted on the outbreak of war.

The British vice in organization is under-estimating the problem, and staffs are always too small for their work. A penny-wise policy in regard to the reorganization of industry may lose us another war; a Ministry of Supply should be created, therefore, with a staff which will be sufficient to give it time to think. Consider, for example, the size of an Air Ministry Supply Staff in early 1918: a hundred officers were insufficient for the volume of work involved in organizing aeroplane engine supply; we could add a hundred for aircraft and accessories; a hundred for materials; fifty for armament and instruments; about a thousand aeronautical inspectors; five hundred technical representatives in firms; and hundreds of expert cost accountants and rate fixers. Such staffs should be formed if possible without the removal of key men from manufacturers, works or offices; and arrangements could be made

whereby the new supply department should use University and other specialists to the greatest possible extent. A supply department for the Army would be on a similar scale: tanks, mechanical transport, instruments, arms and ammunition form a very large proportion of the total requirements.

The Attitude of Industry.

Under the supervision of some great industrialist, industry would be only too glad to be properly organized for mobilization. It has been realized for many years that the next war will be "a contest of material." The Government has already been in consultation with some of the great Federations; and one Federation statement says "the member firms would welcome Government inspection of their factories, and offer their co-operation in all matters relating to design, standardization, and production." The Federation of British Industries recently made a statement to the Press to the effect that it was prepared to make "a voluntary gesture to do everything possible to avoid the appalling muddle which occurred in the Great War."

Officers of the three Services hold varying opinions as regards our final victory in 1918; but it cannot be said that it was solely due to the stranglehold of sea power, or to the British Army in the field, or to the aerial bombardment of enemy munition cities far behind their frontiers. All these played their parts; but victory was only made possible by the creation of a Ministry of Munitions to organize industry. The greatest defect in our defence programme to-day is the lack of a similar Ministry, organized and working before the outbreak of war. Nothing less can save us—not from the repetition of a long drawn-out conflict, but from overwhelming defeat because the machinery of war will not be forthcoming in time.

RECRUITING AND UNEMPLOYMENT

By Major B. T. Reynolds, M.C., R.A. (Retd.)

"We have only to make the terms of enlistment more favourable . . . and we shall get plenty. Treat the soldier properly when you have done with him, *and, of the thousands unemployed, a sufficient number will come to the colours."*

THE above words are not an extract from a recent speech by the present Secretary of State for War, they were written half a century ago by Lord Napier of Magdala. In the course of fifty years, the first part of the Field Marshal's prescription for the solution of the recruiting problem—the bugbear of his day no less than of ours—has received abundant attention. There is little to-day in the terms of enlistment or the conditions of service that would be likely to deter any normal youngster from joining up. The instinct that prompts the Army to throw open barrack gates and invite the local inhabitants to a periodical At Home is a sound one: the everyday life of the serving soldier is the Army's most telling advertisement. But, take a glance at the other side of the medal. Not long ago the writer asked the Goods Manager at one of the great London railway termini whether he employed much casual labour and, if so, how he obtained it. The answer was that the goods, as opposed to the passenger, stations employed a large part of their labour on a casual basis, and that the National Association for the Employment of Regular Sailors, Soldiers, and Airmen could always furnish as many men as were needed. He added that the great majority of the men he saw were ex-soldiers. This is, no doubt, a gratifying tribute to the work of the National Association, who are doing the best they can for these men under conditions of considerable difficulty. But the notorious fact that so many ex-soldiers drift into the position of casual labourers—the hewers of wood and drawers of water of the labour world, is the worst possible advertisement for the Army. The obvious reason why comparatively few ex-sailors and ex-airmen are driven to this unsatisfactory mode of earning a living is that both these Services contain a greater number of specialists and tradesmen whose work bears a direct relation to some civilian trade or job, and the Navy in particular contains a high proportion of long-service men who retire with a full pension.

The number of men to whom the Army can offer a permanent career

is small. Those who are permitted to extend their service and re-engage and who finally leave the Service as pensioners are in a comparatively good position and, if they wish to find employment to supplement their pension and give them something to do, there are a number of suitable posts open to them. But to the ordinary soldier the period of six or seven years that he spends with the colours represents a job and not a career, it differs from most of the other jobs that he will get during his working life in that it is much longer—seven years would be an exceptionally long time in these days for a man to remain in one place of work, or with the same employer—a great part of the time is spent out of England and he is completely out of touch with the labour market. Then, too, six or seven years of soldiering at the most impressionable time of life set their mark on him mentally as well as physically. What the French call *déformation professionelle* is a very real thing ; there is a marked family resemblance between old soldiers all the world over, but the good qualities of the type are not generally held to include the adaptability, independence, and what one might almost call pushfulness—a mixture of self-assurance and determination, the job-hunter's equivalent of the military virtue that we call the " offensive spirit "—that go a long way towards compelling success in the rough and tumble of industrial and commercial life. We form our men in a professional mould and then turn them out to earn their living under conditions to which they have become unaccustomed. From the point of view of the soldier a period of six or seven years with the colours has all the disadvantages of long-service without its compensating advantage of twenty-one years security and a pension at the end of it.

Vocational Training

Of late years an attempt has been made to tackle the problem along the lines of Vocational Training. Obviously, if a man can be taught a trade, he will be in a better position when it comes to signing on at an Employment Exchange and looking for a job than if the Ministry of Labour were obliged to classify him under the heading " General Labourer." The Army Vocational Training Centres have produced some fine results, but they are at present dealing with some 10 per cent. only of the men leaving the colours each year, and it is doubtful if any further rapid expansion can be looked for. Apart from the fact that by no means every soldier would be desirous of taking a course or, indeed, likely to benefit by it, it must be borne in mind that this kind of industrial training is still an innovation as far as industry is concerned. Neither management nor trade unions are by any means universally disposed to regard trainees with favour. The Ministry of Labour has had an extensive experience of industrial training since the War, chiefly

in connection with men transferred from the Special Areas—Durham and Tyneside, South Wales, the industrial districts of Scotland, Cumberland, and the North West Coast. The results so far have amply justified the policy but, in spite of the acknowledged urgency of the problem, the Ministry continues to make haste slowly. In this country we have to work within the limits imposed by a system of government by persuasion, and it probably saves us some costly mistakes in the long run. It is well to remind ourselves that at the close of the War many millions of public money were spent on schemes to assist and hasten the absorption of ex-soldiers into civil life. The results proved extremely disappointing.

Unemployment Figures

It is worth taking a glance at the unemployment figures. Before the War, when the Employment Exchange system was in its infancy and unemployment insurance was confined to some two and a quarter million workers, only a rough and ready picture could be pieced together from the available data. To-day, when it includes every important trade in the country and the insured population numbers well over 13,000,000, the figures published by the Ministry of Labour give a fairly comprehensive idea of what is happening. In the years 1923 to 1929, the unemployment figure fluctuated round 1,350,000; with the coming of the depression it began to rise and in January, 1933, touched the peak of 2,877,000; after that it fell in response to the general improvement in trade and became fairly stable round the 2,000,000 mark; this year it has declined again to a little over 1,600,000. This last improvement is particularly gratifying when taken in conjunction with the fact that the total number of persons in work is higher than it has ever been in the history of the country. But, on the face of it, there appears to be something radically wrong when, out of this enormous total of idle men, we cannot get the handful we require to fill the ranks of the Regular Army.

Taking the round figure of 2,000,000 for the number of unemployed, it is worth while examining it more closely. This represents the total number of different names that appear on the books of the Employment Exchanges throughout the country on the day in each month when the count is made. But not all these people are in the same boat or anything like it. One million—half the total—have only been out of work for a month or less, and a further quarter of a million for three months or less. These figures are in striking contrast to the number of those who have been out of work for a year or more, who amount to some 300,000. Put side by side, they bring out the fundamental difference between two quite distinct problems: firstly, that of unemployment affecting primarily the Special Areas, where our old exporting industries have

been hard hit by the universal tendency towards national self-sufficiency, leaving a number of men, most of them old and many of them formerly skilled, high and dry ; secondly, that of insecurity of tenure which has increased tremendously of late years. The problem of unemployment in the Special Areas has been a ghastly one since the War. A succession of governments of different shades of opinion have grappled with it unsuccessfully ; the first substantial ray of hope has been provided by the recent rearmament programme. There is no doubt that the spectacle of the prolonged unemployment of numbers of men who served their country during the War has not assisted recruiting. But the effect is probably less serious than it might have been owing to the high proportion of younger men who have left these hard-hit areas to try their luck in the relatively more prosperous South. It is doubtful, too, if bad trade and unemployment have ever been such a powerful aid to recruiting as one is inclined to think. The Englishman has always had an incurable dislike of being dragooned, whether by economic factors or any other cause. The fact that in Lord Napier's day, when there was no unemployment insurance, there were still thousands of men unemployed who could not be induced to join the Army, seems to show that we have not altered in this respect in the last half century, and that the " dole " is not at the bottom of the trouble. This is borne out by the rather surprising fact that close on 60 per cent. of the recruits joining the Regular Army in the current year stated that they were actually in a job which they gave up in order to enlist.

Insecurity of Tenure

But the bulk of our population in these days is not in the North. New secondary industries have been springing up round the great centres of population in the South and the Midlands, and it is here that we must look for the bulk of our recruits. Unlike the North, the state of trade in the South has been comparatively good throughout the post-War years and to-day most of these industries, working primarily for the home market, are enjoying something not far short of boom conditions. The overwhelming majority of the men who sign on at the Employment Exchanges here, and whose names go to swell the total of the unemployment figures, are not unemployed at all in the popularly accepted sense of the term. Their problem is one of insecurity of tenure which, for reasons into which we need not enter here, has increased greatly of recent years and is now almost universal.[1] A few figures will

[1] Anyone who is interested, but who finds himself unable to make headway through the jungle of technicalities in which economists and sociologists pursue their researches, might be assisted by an article in *The Round Table* for June, 1936, entitled " Unemployment ; the Wider Problem."

make the position clear : it is estimated that the total yearly turnover of jobs amongst the insured population of 13,000,000 amounts to not less than 8,000,000. The Employment Exchanges are only placing 2,000,000 jobs each year, so that the majority are fending for themselves ; but the ex-soldier is at a great disadvantage when it comes to job-hunting.

Of course, there have always been a number of trades in which employment was uncertain or intermittent : building, docks, the distributive trades, road transport, many food industries, the hotel trade, and numbers of other commercial and industrial activities are dependent on seasonal and other factors that make it impossible for them to guarantee continuity of work to their employees. But one of the effects of the revolutionary changes that our industrial life is undergoing is to make this insecurity of tenure far more widespread than ever before. A certain amount of off-time between one job and the next has become part of the normal conditions of employment of the majority of wage-earners. But, in spite of this, it would probably be no exaggeration to say that a reasonably adaptable and efficient young man ought to have no great difficulty to-day in keeping himself fairly constantly in work almost anywhere in England, with the exception of the Special Areas. In many places there is an actual shortage of labour in the skilled and semi-skilled classes. The Army has to compete for its recruits in what is on the whole a buoyant labour market.

Recruiting and Population

Before attempting to draw any conclusions, there are a few more figures that have a vital bearing on our problem. If we maintained an Army based on compulsory service the contingent of recruits each year would be governed directly by the male birth rate eighteen, nineteen or twenty years before—depending on the age at which we called them to the colours. Under voluntary enlistment the same factor is obviously of first-rate importance and, in any discussion on recruiting, it should be remembered that our male births in 1920 were 120,000 more than in 1919. This represents an increase of almost one in three in the number of lads who will attain the age of 18 years in 1938. The effect should be even more important than would appear at first sight because, although the Army is actually open to recruits between the ages of 18 and 25, the statistics show that 18 is by far the most popular age for enlisting. In the year ending September, 1935, no less than half of the total number of recruits finally attested were 18 years old. An addition of one in three to the population of this age will ease matters considerably after next year.

There is another set of figures that are worth a glance. In the current year, the Army requires 35,000 recruits; this is some 10,000 more than the average, the difference being needed primarily to make good a deficiency accumulated over a number of years. The combined requirements of the Navy and Air Force in men for the same period will not be less than 15,000, thus giving a total requirement for the three Fighting Services of a round figure of 50,000 men. Assuming that, as before in the case of the Army, half this number may be expected to enlist at 18, it will be interesting to get a rough idea of the proportion this would make to the total male population of this age. The number of male births in the United Kingdom for the year 1918 were approximately 300,000. The Army are to-day rejecting two men out of every three on medical grounds, and the other Services an even higher proportion; thus we should be safe in assuming that the effective male population for recruiting purposes aged 18 was not more than 100,000—it will actually be less owing to deaths and other causes. Half of the total requirements of recruits for the three fighting Services for the year amount to 25,000 men. To get this number we should require to recruit one out of every four fit men of this age in the country. If we work out on the same basis the proportion that we should require of the fit men in the three year age-group 18 to 20—last year two-thirds of the total number of recruits attested were of these ages—we find that we must have 1 man in 15. It must be admitted that we shall be lucky to get such a high proportion under a system of voluntary enlistment. Indeed, looked at from this angle, our present recruiting figures do not appear unsatisfactory—one wonders if many other countries could show better results. If there are grounds for dissatisfaction, they are to be found in the appalling proportion of our young men who are judged to be physically unfit to serve their country in arms, in spite of their desire to do so.

Conclusion

It must be evident from the foregoing that if for any reason the Government were to consider it necessary to effect a substantial increase in the establishment of the Regular Army in peace time, they would find themselves obliged to abandon the voluntary system and compelled to resort to some form of compulsory national service. It is not proposed here to enter into the respective merits and demerits of the two systems. To anyone with a tidy and logical mind conscription offers numerous advantages; to mention only two, it would react very favourably on unemployment and it would be of incalculable benefit to the national physique. However, we are not a logical people, and Mr. Baldwin has stated categorically that he is not prepared to consider the matter.

But, we can look forward to an alleviation of the position in 1938, and there is still much that can be done to improve matters without going outside the framework of our present system. Nobody could doubt that, if it were possible to assure the prospective recruit that his ultimate prospects would not suffer when his years of colour service were over, there would be no difficulty about filling the present establishment of the Regular Army. Lord Napier touched the root of the matter when he said, " Treat the soldier properly *when you have done with him . . .*" The Army alone is obviously not in a position to make or implement any undertaking to this effect. Regimental Associations and other bodies have made valiant attempts to make bricks without straw, but the results have been disappointing. Little will be accomplished until the country and the Government are prepared to recognize that they have a solemn obligation to do all in their power to assist in the settlement of soldiers in civil life, and face up to the fact with all its implications.

The ranks of the Army to-day are filled with men of widely different types and capabilities and the problem will vary in each individual case. The first fact that would probably emerge from a detailed study of the question is that the whole task would be vastly simplified by an increase of long-service on the one hand, and short-service on the other. The problem of transforming many men who are excellent soldiers into satisfactory wage-earning civilians is, and has always been, an insoluble one : there is a clear case for allowing men of this type to serve on until they have qualified for a pension. If this were done it should not prove impossible to increase the proportion of short-service men without upsetting the balance between home and foreign service units. The connection already established by the Army Vocational Training Centres with various employers of labour is invaluable ; a vocational training course will continue to meet the requirements of numbers of men serving on a normal engagement, and the scheme can be extended gradually. The various branches of the Civil Service, and in particular the Post Office, absorbed numbers of ex-Service men after the War, and it should be possible to provide more openings in government service for men leaving the colours to-day. There is at last some prospect of the whole question of land settlement in the Dominions being reopened but, if the mistakes of the past are to be avoided, prospective settlers would require training and the whole scheme would have to be carefully thought out and supervised. This is an opening that used formerly to appeal to a number of ex-soldiers ; many have made good at it in the past and might do so again in the present generation. This list does not pretend to be exhaustive, there must be many more possibilities that have not occurred to the present writer.

It is obviously going to cost money to " treat the soldier properly *when you have done with him,*" the introduction of more elasticity into the terms of service would complicate administration and it might reduce the numbers of the reserve, although this could probably be made good by an enlargement of the present scheme for an Infantry Section of the Supplementary Reserve ; but it may well represent the only way of maintaining the Regular Army up to its peace-time establishment and solving the age-old recruiting problem. Where it costs money in one direction, it would save it in another by reducing the number of ex-soldiers who spend long periods out of work through their chronic inability to fit themselves into the picture and find a satisfactory niche in civil life.

NOTE.—At an informal conference held lately at the War Office with the representatives of the Press on the subject of recruiting, Lieutenant-General Sir Harry Knox, Adjutant-General to the Forces, announced that important changes would be made in the system of physical examination for the Army. The present standards were, he thought, too rigid and their enforcement resulted in the loss of many potential recruits. In future there would be four grades of physical fitness, numbered from A1 to A4. Men destined for service with the cavalry, infantry and artillery would be selected from category A1 ; men fit for duty in the rearward areas or on the lines of communication only would be graded A4, and between these two extremes there would be two categories of " medium fitness." This more elastic system of physical examination would enable the Army to take in and train a proportion of the large numbers of men who, at present, have to be rejected by the medical authorities.

SOME STRATEGICAL THEORIES OF CAPTAIN LIDDELL HART

By Colonel R. H. Beadon, C.B.E.

EVERY great war or cycle of wars has produced its interpreters, who, moreover, going beyond analysis of the past, seek to draw and to offer lessons for the future. The aftermath of the Napoleonic struggle has shown a Jomini and a Clausewitz whose teachings have, if not dominated, at least influenced military thought throughout a century, and that despite the rapid evolution of the mechanism by which war is conducted. That no such established doctrinaires have emerged as the result of what we call the World War of our time is, no doubt, partly due to the fact that the panorama is too vast, too varied, and too close for due envisagement, and partly because so much conflicting evidence and deduction has come from its leading protagonists that little clear cut and definite can yet stand out. In our own country there is not, and never has been, wide public interest in the scientific or technical side of the profession of arms, and it is not perhaps too much to say that, owing to the nature, size, and peculiar duties of our Army, interest in the higher study of war is confined within comparatively limited circles of soldiers themselves. It is significant, for instance, that up to recent days the great episodes of our military history have fallen to civilians to narrate—Napier stands among the few exceptions—for is not Sir Charles Firth the leading authority on the Cromwellian period, Professor Trevelyan on that of Marlborough, Sir Charles Oman on that of the campaign of Wellington in the Iberian Peninsula, Kinglake on the Crimea, and Sir John Fortescue on the history of the Army itself? It is only latterly that the Army has begun to produce its own school of writers, and these are necessarily too professional to make any general appeal to their countrymen. Far better known to the public at large are the military works of Captain Liddell Hart, who, though not a professional soldier, has, through the authorship of a number of books, biographical, tactical, and strategical, and by numerous contributions to Press and periodicals, gained a popular reputation as a critic

of military affairs ; and in so far as he has been successful in stimulating interest in these latter during a period of stagnation and reaction, he has rendered a public service.

Now if a writer on these subjects has his difficulties in creating a public in England, he has, at any rate, one advantage over his Continental confrères, for in most European countries the work of military critics must run the gauntlet of readers, not only interested but also instructed in military questions, and therefore severely judicial of those who purport to teach them. Far easier are the conditions that obtain here, and the critic for the most part remains uncriticized, except perhaps by such few professional soldiers who have time, inclination, and knowledge to give to the matter. And these latter can be effectively dismissed as hidebound, dull, and unimaginative, for it is part and parcel of the amateur critic's armament, both defensive and offensive, to decry what is commonly termed " the military mind."

Captain Liddell Hart's strategical doctrine, to which he adverts in various forms in most of his better-known works and many of his short writings, may—to use his own words—be defined as follows : " that throughout the ages decisive results in war have only been reached when the approach has been indirect. In other words that in strategy the longest way round is the shortest way there." In *The Decisive Wars of History*, a volume written to support and expound this dogma, which is reiterated and elaborated in later works,[1] he gives a survey of wars of ancient and of modern times, the series embracing 240 campaigns, of which latter he claims that in only six—those which culminated at Issus, Gaugamela (better known as Arbela), Friedland, Wagram, Sadowa, and Sedan, was a decisive result obtained by a direct strategic approach to the main army of the enemy—" surely slender justification for the complaisant adoption of a direct strategy by anyone entitled to be called a General." Based on these conclusions, the author goes on to assert that the soundest strategy in any campaign is to postpone battle until the moral dislocation of the enemy renders the delivery of a decisive blow practicable. It is indeed a far cry from Alexander to Bonaparte, over two thousand years, but the industry and ingenuity with which Captain Liddell Hart builds up his case do, to superficial examination, suffice to lend it a certain plausibility. But it is important

[1] *The Decisive Wars of History* was published in 1929. Since then *Sherman* (1930), *The Real War* (1930), *The British Way in Warfare* (1932), *The Ghost of Napoleon* (1933), *T. E. Lawrence in Arabia and After* (1934), have all emphasized the theory which also appears to a lesser extent in other works.

to note that the writer first clears the ground for himself by dismissing as irrelevant to this particular analysis, the factor of numerical strength and what he terms "the details of supply and transport," by which latter it will soon be discerned that he means those considerations relating to the maintenance of armies in the field.

Yet, even having thus cleared the field of fire for his arguments, Captain Liddell Hart is not content. For he is next concerned to enlarge the target itself by claiming as "indirect approach" or "true grand strategy"—for he makes the terms synonymous—every instance when an army did not move straightway and without ado to a frontal attack on its opponent—a procedure which he curiously remarks has always been the normal form of strategy. Moreover, the method he employs to reach his deductions, which be it recalled hold good for a period of over two thousand years, is to argue the victor's "indirect approach," even when such is not very apparent, while ignoring or skating over the manœuvres of the vanquished even when the latter are more apparently "indirect." The treatment is shown by taking two examples from our own Civil War which are among those he cites in his support. The first concerns the campaign of 1648, of which he writes: "Instead of advancing into Scotland or even first attempting to meet the invading Scottish Army, Cromwell and Fairfax moved simply to crush the various outbreaks in England, while Lambert was left to delay the Scots, falling back slowly before them. Cromwell's order of treatment here deserves a note in view of the doctrine that, while and if the main enemy is overthrown, the lesser foes may safely be left to fall of themselves."

What are the facts? In the first place, the strategic design was not in Cromwell's hands. An outbreak in Wales occurred late in February, and it was not until April that it was known that the Scots were raising an army to invade England. At the end of the latter month Berwick and Carlisle were seized. To meet the first of these dangers, Fairfax ordered Cromwell to Wales with merely two regiments of horse and three of foot, while he himself prepared to march against the Scots. Before, however, the Commander-in-Chief could move, serious risings took place in Essex, Kent, and Surrey, which were supported by a mutiny of the fleet in the Downs and rioting and disaffection in the capital itself, while all over England other risings were incessantly breaking out, which threatened to become general unless at once suppressed. With the whole existence of the Government at stake it was inevitable that the nearest danger—not the more distant—should be dealt with first, and accordingly Fairfax moved to crush the insurgents in Kent and Essex. He was still engaged in the latter county when Cromwell,

having disposed of the Welsh business in July, proceeded against the Scots, who had not crossed the border until the 8th of that month. With the sparse forces at his disposal and assistance from Fairfax impossible, the Lieutenant-General sought union with Lambert, whose cavalry had been observing the enemy on his way South, and, marching by way of Gloucester, Leicester and Nottingham, he effected his junction near Knaresborough, in the West Riding, on 12th August, " instead," writes Captain Liddell Hart, " *of marching direct to meet the Scots, who were coming down by the west coast route.*" He would indeed have been a strange general who would have marched to meet 20,000 men with some 4000 ! Moreover, Cromwell did *not* know until he reached Knaresborough that the Scots were using the west coast route, being under the impression they were advancing by way of Yorkshire. Directly he heard aright, he and Lambert set out to cross the hills which separate Yorkshire from Lancashire, and on August 16th marched down the valley of the Ribble with 8500 men. Two courses were now open to them. They might pass to the South bank of the river and seek to bar Hamilton's advance southwards by putting themselves across his path, or they might keep along the northern bank of the river and engage the enemy somewhere near Preston itself. Captain Liddell Hart claims that their " descent on the tail of the Scottish column dislocated its balance," whatever precisely that may mean, and gives Cromwell credit for a subtle manœuvre, but in truth the general had no thought of any such subtlety, and his own evidence is the best proof of that. He tells why he made the choice of remaining on the northern bank. " It was thought," he wrote, " that to engage the enemy to fight was our business," and to march straight down upon Preston was more likely to bring about a battle because it seemed probable that Hamilton would stand his ground there. In short, battle was uppermost in his mind, as it usually was. Captain Liddell Hart's deductions can in truth only be arrived at by ignoring not only the political considerations, but the military facts also.

An even clearer case of his efforts to interpret history to fit his theory is to be found in his account of the Dunbar campaign of 1650, which he avers " furnishes remarkable evidence of how strongly Cromwell was imbued with the strategy of indirect approach."

" When," he writes, " he found the Scottish army under Leslie in position across his path to Edinburgh, a mere contact-making engagement satisfied him of the strength of Leslie's position, and, although within sight of his goal, he had such self-restraint as to lead him to fall back to Musselburgh. Even when Leslie moved forward to meet him, Cromwell refused battle, and, instead, issued three days rations as a

preliminary to a wide manœuvre through the hills on Edinburgh and the enemy's rear. And when Leslie succeeded in moving across directly to bar him directly at Corstorphine Hill (21st August, 1650) Cromwell, though now far from his base, sought yet another approach by a manœuvre to his right, only to be blocked afresh by Leslie at Gogar (22nd August). Most men would have gambled on a direct battle. But not Cromwell. Cutting his loss—in sick, due to exposure and fatigue—he fell back on Musselburgh, and thence to Dunbar, drawing Leslie after him. Neither, however, would he embark his army, as sundry of his officers urged him, but waited at Dunbar until his opponents had moved down (2nd September) to place themselves on Cromwell's line of retreat to Berwick—thus incidentally placing Cromwell on theirs."

Reading such an account, the implication is overwhelming that by a skilful and calculated series of feints and manœuvres, Cromwell lured his opponent into a position in which he might destroy him. In fact, precisely the opposite was the case, and the happy outcome from the English point of view was solely due to the knot in which they were involved being cut by battle. History shows numerous other instances of strategical defeat being redeemed by tactical victory. That Captain Liddell Hart is able to make any sort of case is dependent on his assumption that, when Cromwell was blocked at Gogar on 22nd August, " most men would have gambled on a direct battle," similar reasoning as that used in the description of the Preston campaign. Few Generals would have done any such thing as to attack nearly double their own numbers, strongly positioned. Leslie was an able and experienced soldier and, although his 26,000 men, including some 7000 regulars, were not equal in quality to the 16,000 English, he was successful in baulking every move of Cromwell's to reach Edinburgh or to bring him to battle in any fashion except when the tactical advantage was wholly his. And as the weeks went by the strategical initiative passed more and more definitely to the Scots, so that by the end of August Cromwell, with supplies exhausted and uncomfortably pressed, fell back to the coast with his force reduced to 11,000, with sickness rife and even discipline failing, or, in the words of a contemporary account, with " a poor, shattered, hungry, and discouraged army." Again there is Cromwell's own witness as to the greatness of his danger on 1st September. " We are upon a position very difficult. The enemy hath blocked our way at the path of Coperspath, through which we cannot get through without almost a miracle. He lieth so upon the hills that we know not how to come that way without great difficulty, and our lying here daily consumeth our men, who fall sick beyond imagination." This is hardly the language of a General who was on the eve of consummating

his strategy and satisfied that he had lured his opponent after him to destruction. Yet such is Captain Liddell Hart's interpretation. If ever an army was " dislocated," to use Captain Liddell Hart's own term, it was the English army after that month's operations in Mid and East Lothian. " Thanks to his knowledge of the country," writes Sir Charles Firth, " he (Leslie) had again outmanœuvred Cromwell." Fortescue is even more emphatic. " Having driven his enemy into the Peninsular of Dunbar, Leslie sent forward a force to bar a defile on the road to Berwick at Cocksburnpath and cut off his retreat. The situation of the English was desperate and Cromwell was at his wits end." In so far as could be seen, only two practicable courses lay open to him—either to fortify Dunbar and stand there at bay until reinforcements could come from Berwick, or to endeavour to embark the army and begone. Cromwell did not often hesitate, but he did on this occasion, for he had to weigh the doubtful chances of embarkation under pressure. Ere he could make up his mind Leslie made it up for him, as, believing the English were beginning to ship their guns and some of their infantry, he moved forward from his dominating position on 2nd September to where he thought better to be able to interfere with this process. Faulty dispositions gave Cromwell his tactical opportunity and the Scots were destroyed on the following morning. The choice of Cromwell as an expositor of the " indirect approach " is a peculiarly unhappy one for his strategy was, rightly or wrongly, not only remarkable for its vigour and audacity, but, in his own words, eschewed " lingering proceedings like those of soldiers beyond the seas to spin out a war."

To cite in detail further instances of Captain Liddell Hart's curious interpretation of the facts of military history would be wearisome. Since, however, he has written a whole volume—*Sherman*—as a classic illustration of his theory, it is apposite to point out that therein he varies his method of argument by adducing facts which, in so far as they go, are indisputable while omitting other relevant facts. He shows how Sherman's operations, which aimed and in fact succeeded in attacking the Confederacy at its most vulnerable spot, were responsible for undermining the whole edifice of its power, while the Federal commanders in the Eastern theatre were beating themselves against Lee's Army of Northern Virginia. But the march through Georgia was only made possible because Grant by hard fighting pinned down the main Confederate Army under Lee and prevented it from manœuvring. Moreover, the whole conception of the Federal offensive in the West demanded time to make its influence decisive. Sherman was far away on the Mississippi when Lee made his supreme effort—which failed by

no great margin at Gettysburg—to obtain a decision where the Federals could not afford to be crushed.

Now what are the advantages adduced as inherent in the " indirect approach," and how can ability to apply the latter be ensured? In *When Britain Goes to War*, in which the best part of a chapter from *The Decisive Wars of History* has been repeated under the title of *Strategy Reframed*, no room is left for ambiguity. " To move directly on an opponent is to consolidate his equilibrium—physical and psychological, and by consolidating it to augment his resisting power," while to move otherwise tends to his " psychological dislocation " and to imbue him with " the sense of being trapped." That is his answer to the first of these questions, and it is indeed obvious that in the instance of adversaries of approximately equal morale, armament, and training and of numbers not vastly disproportionate, the issue will hang to the main extent on generalship, which aims at either so weakening the enemy power and will to resist that he cannot offer or even accept battle, or the placing of or reaching him, in such a posture that he must accept, or be induced to accept, battle under circumstances disadvantageous to him. For battle may or may not be necessary to decide the campaign. Ulm is an example of the first circumstance, and Culloden and Sadowa of the second. In any struggle generalship must, of course, play a large part, great enough often to compensate for material and numerical inferiority. Even so, the most skilful or successful strategy, by which the enemy has been outmanœuvred or " dislocated," may be brought to naught by tactical defeat in the battle necessary to clinch it. It has been shown how this happened at Dunbar, and it happened also on a small scale at Sedgmoor and on a large one in the Waterloo campaign. Thus " dislocation " of the enemy cannot then ensure victory—at most it weights the scales in favour of it. The term " soldier's battles " and the justifiable claim that it is characteristic of the British soldier not to admit defeat, speak for themselves in recalling how unskilful strategy or " art of generalship " has been redeemed on the stricken field. Wellington saw this clearly when questioned as to his prospects by Creevy or some other busybody on the eve of Waterloo, in view of the fact that Napoleon had separated him from Blücher. Pointing to a youthful redcoat, the Duke remarked, " It all depends on that fellow." It did.

Returning directly to Captain Liddell Hart's axiom, it will be found that in surveying war in general and not in the particular when the morale, armament, training and numbers of two adversaries are on an approximate equality, which is more the exception than the rule, it is apparent that a direct move on an opponent is by no means certain to

consolidate his equilibrium and by consolidating it to augment his resisting power. It may well have the contrary effect in that possibly for political, possibly for moral or material, or possibly for meteorological or topographical reasons, one side may desire nothing less than that its opponent should move against it by the shortest, swiftest, and most obvious route. In cases where there is disparity in morale the weaker may profit by the slightest hesitation or delay in attacking him; in cases where there is a disparity in armament the weaker may fear even a defensive battle on ground of his own selection, preferring that his levies, though perhaps temporarily concentrated for the purpose of supply, should split up for some form of partisan or guerilla warfare which, acting against the hostile communications or detachments, might hold better promise of success than the hazard of a pitched battle even should the actual numerical strength be in his favour. Such was the case of the Spanish armies in the Peninsular War, the Russians in 1812, and was the case with the Abyssinians recently. Again "the lingering proceedings" of which Cromwell wrote may be far less to be apprehended than a direct attack, on account of the time factor, in awaiting some dilatory or prospective ally, or for the permitting of the organization of resources hitherto unorganized. An example of the one is to be found in the situation of the Allies prior to March, 1918, when a German direct onset in the West—they could hardly make any other unless they moved through Switzerland—had to be faced before the Americans could make their presence felt. For the second it has only to be observed that there was more method than would appear in the Kaiser's order to wipe out "the contemptible little army" than lies on the surface, for it was from the ranks of that same army that personnel were required for the organization and training of the vast masses of raw material that were subsequently to take the field.

For meteorological reasons any sort of delay may favour the weaker, in that rains, which may turn the roads or tracks into quagmires and the rivers into floods, may intervene, if the assailant does not set about his business in prompt and direct fashion, taking time by the forelock. "Ask me," said Napoleon, "for anything but time." But there are a hundred considerations which go to contravert Captain Liddell Hart's doctrine, and lest there be any mistake about that doctrine one has only to turn to his *Concentrated Essence of War*, an article originally published in the JOURNAL and repeated in *When Britain Goes to War*. Here he "attempts to convey—in the simplest form—by crystallizing a few truths *that in observation seem so universal and in analysis so fundamental, as to be termed axioms.*" (The italics are those of the present writer.) There are eight axioms in all, but for the present purpose it

will suffice to mention three which are laid down as follows: "Choose the line (or course) of least expectation" and "Exploit the line of least resistance"—admirable counsel under many conditions, but still counsel rather than inviolable principle or axiom. To beware of axioms in war is the teaching of experience. The third—"Don't lunge whilst your opponent can parry," is applicable enough for those endowed with vision to see into the future, but unfortunately ordinary mortals can rarely know for certain whether their opponents can parry until they have lunged! And even more mysterious is the fashion in which this axiom is elaborated. "The experience of history shows that no effective stroke is possible until the enemy's power of resistance or evasion is paralysed." Now if this means that one side cannot win until the other is beaten, it is indubitably true. But if it means that no decisive victory is possible unless the hostile power of resistance or evasion has been paralysed before battle—if, of course, battle is necessary to clinch the result—then it is demonstrably untrue, for the experience of history shows no such absolute condition. At the last all may depend on battle. William had paralyzed neither Harold's power of resistance nor evasion at Senlac prior to the tactical event, and it was hard fighting, the issue of which was decided by a tactical ruse that finally gave victory to the Normans—and a pretty complete victory too, although after a long and swaying struggle.

Victory indeed cannot be guaranteed to any army unless it has the will and the competence to fight the enemy down. "Victory," said Scharnhorst, "is won by teaching soldiers how to die, not to avoid dying."

As to the means by which this "dislocation" of the enemy is effected through the medium of the indirect "approach," these are set down as mobility and "dispersion." The first, of course, in the sense of freedom to move rapidly, to move anywhere, and to continue moving at will, is among the most powerful weapons in the hand of a commander. The second, however, is not so simple, and, since Captain Liddell Hart has evolved the outward paradox that "true concentration is the fruit of calculated dispersion," which dictum is expounded at length in both *The Ghost of Napoleon* and *When Britain Goes to War* it is necessary to summarize his contentions. Briefly, these latter are based on his statement that "no catchword has done more harm to military thought and practice" than "that much beloved and much abused word concentration." And from thence it is proceeded to argue that Napoleon's interpretation was very different to the obvious one of holding one's forces well in hand and of keeping them as closely grouped as possible, whereas no one kept them so scattered as did Napoleon.

But for how long has " concentration " meant what, for the purposes of his submissions, Captain Liddell Hart assumes ? True in the XVIIth and XVIIIth centuries the conventions were—though there were exceptions in practice—that armies moved and fought in solid blocks. But that was partly because the flexible divisional system had not been elaborated, partly because the roads were so few and indifferent that lateral communications were hard to ensure, and partly because of the limited range of firearms, while in cases where local resources were sparse, in order better to protect the slow and cumbrous transport trains. But, as conditions evolved, so too did the principle of concentration evolve likewise to a lesser rigidity in its meaning, so that to-day it conveys merely the power to be superior at the decisive point—a process none too easy of achievement, since the decisive point is often far from obvious and does not necessarily remain constant. At any rate that power does not imply that the army seeking it must constantly be kept closely grouped.

Napoleon, as Captain Liddell Hart emphasizes, as did Professor Wilkinson before him, enjoyed the benefit of the teaching of Bourcet and Guilbert, the former of whom strove for flexibility and the latter for mobility, though it is worth noting that General Camon, a profound writer on Napoleonic war, does not consider that Bourcet had that influence on Napoleon which has been attributed to him. But Napoleon did, of course, inherit the divisional system, and it is significant that in his earlier campaigns his " dispersion " was more apparent—not from any exaggerated idea of the " net " to which Captain Liddell Hart imputes it, but because the French Revolutionary armies, owing partly to their size, *had of necessity to live on the country*, as to only a lesser extent did the Imperial armies which succeeded them. And it was not only for purposes of supply that it was necessary to move on as broad a front as possible, but also because the army thereby was endowed with a greater mobility. In such sense the Napoleonic " dispersion "—though that term is hyperbolic and therefore misleading—was calculated to bewilder a slower-moving enemy and to forward the famous manœuvre *sur les derrières*. At the same time little or nothing was risked so long as the various detachments were in supporting distance of one another, or, in other words, able to reunite before superior enemy forces could crush them. Captain Liddell Hart proffers elaborate arguments that such " dispersion " compelled the enemy to disperse also, and indeed it did often have that effect, so that Napoleon, by gathering in his " net," could entrammel their detachments and beat them successively. But that is not to show that " dispersion " *must* force the opposing side to disperse likewise. The Emperor's adversaries were, it is true, often most obliging in this respect, but in cases when

they declined to be strategically " distracted," as Wellington declined at Waterloo and the Allies at Leipsic, the issue depended on battle which, in the instance of the two above mentioned, went against the French, although Napoleon, on account of the quality of his fighting machine and his superior mobility, was usually able to arrange the tactical event on ground and occasion of his own choosing and therefore gain victory. It was superior mobility rather than " dispersion " that was the key to the Napoleonic strategy, except in so far as " dispersion " spelt mobility.

It is inevitable that, since Napoleon's " dispersion " became less marked as his career progressed, Captain Liddell Hart should, for the purpose of supporting his theory, identify that circumstance with the Emperor's decline and fall. " General Bonaparte," he writes, " applied a theory which created an empire for him. The Emperor Napoleon developed a practice which wrecked his Empire," that practice being elaborated by the explanation that his victories after Jena were won less and less by mobility and surprise than by sheer offensive power, and consequently purchased at a cost which caused an increasing drain on his material balance. All war is, of course, bound to cause such drain, and the Emperor was certainly fertile in war. The point is whether his victories between 1804 and 1811 caused an undue strain. Admittedly as Emperor he started well enough, for the campaigns which successively followed his coronation in 1804 were Ulm, Austerlitz, and Jena. But if his descent began from 1806, then such descent is not very apparent, for the zenith of his career was not reached until 1812, prior to the invasion of Russia, or in other words two years before the end of his reign. And so little had his available man power been exhausted then that he had no less than 1,100,000 men at his disposal, of which 600,000 were in the *Grande Armée* and 160,000 in Spain. True these numbers included a proportion of none too enthusiastic foreign contingents, but even without them he was strong enough to overawe the Continent. And by what a plethora of victories had this result been achieved between 1806 and 1809 ! Eylau was a check, but hard on its heels came Friedland, which has been defined as " a fine monument of military skill fit to adorn works of instruction on military art," Abensburg, Eckmühl, Ebelsburg, which brought the Emperor to the gates of Vienna a month after Austria had declared war, and at no excessive cost either. Captain Liddell Hart underlines what he describes as Napoleon's " first great defeat " at Aspern-Essling, but in a strategical sense the battle was scarcely more than a check by exactly double his numbers, and the extent to which it affected the issue of the campaign may be gauged by the fact that a few weeks later, and close on the same

spot, the Austrians were overthrown at Wagram and compelled to sue for peace.

So strong then was Napoleon that, although the Spanish and Portuguese adventure, upon which he had gratuitously embarked some two years before, was still on his hands, he not only proceeded to annex Holland, but to fasten a quarrel on Russia, whose power to interfere with him outside her own boundaries had been scotched at Friedland. It was the broken spell and the material disasters in Russia, and to a lesser extent in Spain, that gave Prussia and Austria opportunity to join the coalition against France, which was strong enough to overwhelm her with numbers—a coalition which, had it been raised before, would have been equal to dealing with her. And against so mighty a combination not even the victories of Lützen, Bautzen, the great defensive battle around Leipsic, nor yet the Emperor's brilliant manœuvres in 1814, could prevail. Even so the most generous terms of peace were offered him—twice before Leipsic and once after. If then Napoleon foundered, as Captain Liddell Hart claims, through his habit of fighting expensive battles from 1806 onwards instead of relying on his former methods, was it not that his adversaries had learnt sufficient to prevent him from exploiting those methods? But those the Emperor did use were efficacious enough until he made the fatal error in the invasion of Russia which cost him his army. It was from the time he crossed the Niemen in June, 1812, that his descent, in truth, began, for he was then involved on two fronts over 2000 miles apart.

Since so many of those who are accustomed to be considered as among the great Captains have not consistently acted on dogma, but rather in the light of their own genius in relation to the facts of the existing situation as they knew it and the multitudinous shifts and variations inherent in war, Captain Liddell Hart is constrained to seek his ideal General. He appears to find him in Saxe, " a supreme artist," " a connoisseur of war," " creative," " original," and to him he reverts in and out of season as the man " who cleared the way for modern methods by laying the foundations of mobility," although curiously these superlatives seem to have been based more on what the Marshal wrote in his famous *Reveries* than what he accomplished in the field. Now Saxe had, no doubt, some original ideas—most great soldiers have —for infallible recipes for success are not to be found in text-books, although it may be noted that, in the opinion of General Camon, he obtained most of the ideas contained in his *Reveries* from a previous French writer, Folard. And Captain Liddell Hart is unfortunate in the principal instances he adduces to demonstrate the originality in question. A generalization on the science of war, the dicta on the

economic size of armies and decisive completion of victory are all to be found in General Monck's *Observations on Military and Political Affairs*, written over a century previously, and in wording so similar that it is almost impossible to believe that Saxe had not perused the Englishman's work. In his efforts for greater mobility Saxe necessarily devoted much attention to the problems of supply, for, as Captain Liddell Hart points out, XVIIIth-century armies were fettered by a chain of magazines in which stores and provisions were accumulated before the opening of a campaign, and from which it was impossible to move far unless the chain was extended by the creation of new depots. Thus armies of any size could only amble round in a circumscribed area.

How Saxe addressed himself to the amelioration of such conditions will surely whet the appetite of the student of strategy, for with roads as known to-day virtually non-existent and means of transport limited and clumsy, the problem was a tremendous one. There are three methods by which an army can be maintained in the field—if the mere hazard of the capture of supplies from the enemy and the utiilzation of a fleet in a purely coastal campaign are excluded. The first lies in the old magazine system mentioned above, with its pre-war access to the intended theatre of operations, from whose cramping of mobility Saxe sought to escape. The second is by living on the country—seldom possible for more than limited numbers, or in rich territory, and in any case necessitating dispersion over a comparatively wide area. The third consists in the proper organization of a line or lines of communication with bases and depots, through which necessities can be forwarded in a continuous stream from rear to front, and which line or lines extend or contract with the movements of the army served. Therefore towards increased mobility, Saxe would have to rely on either of the two last of these means or some combination of both; and both, of course, imply an improved transport service. What then was his answer? Is it to be found in a scientific scheme of road construction and the organization of a militarized supply and transport system with specially suitable vehicles and the introduction of more portable kinds of rations than previously utilized? For by such methods, combined with defensively organized lines of communication, greater radius of action could certainly have been obtained. Captain Liddell Hart airily dismisses the problem as follows: "To remove the greater hindrance to mobility caused by the magazine system of supply, Saxe proposed a system of company transport and messing which accords with modern practice. He also proposed that on long-range marches cattle should be driven along with the army, and that biscuit should be used instead of bread—many promising plans of campaign were consumed in the ovens to which, as to stakes, the XVIIIth-century armies were tied."

Now this sort of explanation is akin to that given to the prospective squirrel catcher in that it begs the whole question. A system of company transport and messing facilitates detailed distribution and perhaps also local requisitioning, but beyond these it does not touch the fringe of the business of "producing the goods," while as to Saxe's "original" ideas on the subject of live cattle and biscuit, Cromwell's armies were so supplied, and the Dutch armies before Cromwell's. In sum, Captain Liddell Hart, after endeavouring to establish a case for originality in the search for mobility—that mobility being inevitably dependent on supply—wholly fails to explain how supplies are to be obtained. Nor does he evince any sign of understanding that Saxe's army of "economic size," upon which he dilates, was fixed in the neighbourhood of 50,000 men for technical reasons *in that it was the maximum number that Saxe considered could be maintained with freedom to move and manœuvre.* Indeed he actually claims that the advent of the air arm has given "a new force to Marshal Saxe's acute verdict two centuries ago—that multitudes only serve to perplex and embarrass." Saxe was, no doubt, a very acute man, but he could hardly be credited with such remarkable powers of foresight. Monck's similar observation as to the inconvenience of excessive numbers—he fixed almost the same figure as Saxe for the ideal army—was supplemented by the further remark that "large armies often destroy themselves from want of victuals"—the consideration which prompted the French Marshal. But the most curious instance quoted of Saxe's originality concerns his well-known saying: "I am not in favour of giving battle, especially at the outset of a war. I am even convinced that an able General can wage war his whole life without being compelled to do so." For Vegetius expressed the same sentiments in the IVth century, when he approved what he termed the custom of the ancients to avoid battle unless victory was almost certain.

With all his gifts of literary presentation, Captain Liddell Hart does not understand that, as Major J. R. Kennedy has said, strategy like wisdom has no permanent form, but may have to be applied differently in every case, and is to be judged only by its efficacy. He does not understand that strategy cannot be separated from administration, and he does not understand that the sole justification for the castigation of the professional soldier must be that he is not professional enough.

THE FLEET-FLAGSHIP

A PROBLEM OF NAVAL COMMAND

By LIEUTENANT G. M. BENNETT, R.N.

PART II. THE PRESENT-DAY PROBLEM. [1]

TURNING from the historical to the present, it is proposed to attempt an examination of the requirements of a fleet-flagship to-day. These will be conflicting, and the resultant choice of ship must be a compromise based on a careful examination of the requirements and a balanced decision as to their relative importance. The requirements appear to fall into two classes, namely those which are dependant upon the position which it is anticipated that the ship will be required to occupy, e.g. whether she is to be required to carry a main armament of heavy guns and be armoured to withstand 16 in. shell fire, and those which are independant of this factor, e.g. accommodation for the C.-in-C. and his staff. These two classes cannot be entirely divorced, but those requirements which depend upon the position which the flagship is to occupy will probably be the governing factors.

It has already been shown that the nature of the naval Commander-in-Chief's command is that of personal direction, and that naval warfare being mobile, the Admiral must accompany his fleet. During the approach, his principal desire will be to occupy that position which is most favourable for controlling his own fleet and for studying the movements of the enemy. This will not necessarily be with the battle fleet; indeed it will probably be in advance of that force. But, as the late First Lord said recently "air attack has not rendered the battleship obsolete, and the battleship remains the element of ultimate force in the fleet and the final arbiter of sea power": thus the principal object of the Commander-in-Chief is still the destruction of the enemy's battle fleet, and this can only be attained by his own battle fleet. The direction of that force once it has become engaged is, therefore, his most important consideration. At the same time he must co-ordinate the operations of all the subsidiary craft in his command so that their efforts will be directed to assisting his battle fleet in achieving

[1] Part I. of this article—An Historical Survey—appeared in last quarter's JOURNAL, p. 601.

its object. It is hardly possible and certainly undesirable for the Admiral to lead personally all the units of his command ; so the greatest degree of independence and initiative must be allowed to the subsidiary units, while the vital importance of the battle fleet indicates that this force should come more directly under his control. Lesser factors affecting the position of the fleet-flagship are the advisability of not exposing her to any great risk of damage ; nor should she be in such a position that her communications are unduly impeded.

Having noted the principles governing the position of the C.-in-C.'s flagship during the approach and during the main action, the following requirements must be considered :—

(a) Is a speed in excess of the battle fleet required ?
(b) To what extent must she be armoured and protected against various forms of attack ?
(c) To what extent must she be fitted with guns or other armament ?

Certain requirements, which are independent of position, may also be listed :—

(1) Proper accommodation for the C.-in-C. and his staff. Without adequate cabin and office accommodation they cannot function with full efficiency.

(2) The requisite W/T and visual systems of communication. The C.-in-C.'s requirements in this connection are extensive ; it must be possible for him to issue orders to any unit of the fleet, and also to receive reports from every possible source. This involves the provision of more apparatus and personnel than is required by a private ship and increases the difficulty of the accommodation problem.

(3) Plotting facilities. These must be good if adequate use is to be made of the reports received by W/T, etc.

(4) The C.-in-C. and his operational staff require an action position in the flagship from which they can obtain an adequate all-round view, yet at the same time be protected against all forms of attack which they are likely to encounter. It is also desirable that this position should be as free as possible from distraction due to the weapon activity of the ship itself.

Airship or Aeroplane

The idea of the C.-in-C. using some form of aircraft is, at first sight, an attractive one. It would place him in a position where he could obtain a bird's-eye view of the opposing forces, provided visibility was good and there was no low cloud. This might be of more value to him than all the mass of conflicting information sent in by other means,

especially during the approach. The more spacious airship, on account of its vulnerability, is obviously unsuitable for the purpose. In the present state of aeroplane development the C.-in-C. could only remain in the air for a limited number of hours, and if he is to be provided with a relay of aircraft for his personal use, the fleet, flagship would have to be an aircraft-carrier. In an aeroplane, he would for all practical purposes be without a staff, and his communications would be totally insufficient for his requirements. While securing a bird's-eye view, he would be deprived of his tactical plot, and therefore be unable to appreciate the importance of a report of a new enemy force sighted by his outer screens, even if, with his limited communication facilities, he were able to receive such a report. In this connection, the remarks of an American writer are to the point: "The risks involved in a Commander-in-Chief leaving his flagship must be carefully weighed, and he must be in direct and instant communication therewith at every moment of his absence. Control of operations from the air should be primarily valuable in making dispositions prior to the opening of fire; and it would seem that it should terminate before that event as otherwise there is too much risk of the C.-in-C. being lost or permanently separated from his command. . . . Hostile forces can make their appearance from any direction. Moreover sudden changes in weather conditions may reduce or destroy visibility. The flagship does not remain in one place as does headquarters ashore. It would, therefore, appear extremely unwise, in the present stage of development of aircraft, for a naval Commander-in-Chief to thus separate himself from his fighting forces during an engagement."

A more practical solution appears to be to provide aircraft for the Chief of Staff or other staff officer to obtain the bird's-eye view for the C.-in-C.

The Aircraft-Carrier Flagship

In many ways an aircraft carrier would make an excellent flagship: she could provide adequate accommodation, plotting facilities, and communications; her speed would be sufficient for all requirements, and, in spite of the work of operating her aircraft, she would probably be freer from distracting noises during battle than other warships; moreover, the C.-in-C. would be in direct touch with the air observers. The governing consideration is, however, that of position. During the approach, the carrier could be anywhere the Admiral desired, except that freedom of manoeuvre would be curtailed while operating aircraft and limited by the necessity for avoiding any form of enemy action owing to extreme vulnerability. On the other hand, he could not, from a carrier, personally direct the battle fleet once it had become

engaged, except to a limited extent from a position on the disengaged side of it. It is true that, in this position, he would not expose himself to the danger of the battle line; but he need not do so in any other type of craft. It will be seen, therefore, that the carrier would only be practicable as a flagship if the C.-in-C. were content to direct the operations of his fleet from a considerable distance.

Cruiser or Capital Ship

It is probable that a large cruiser could, to a reasonable degree, fulfil all the requirements of a fleet-flagship save that of enabling the C.-in-C. to be with the battle fleet when it is engaged. Since our choice of fleet-flagship now lies between the cruiser and the capital ship, the decision must rest largely on consideration of whether it is or is not necessary for the C.-in-C. to be in the battle line.

Firstly, let us examine the disadvantages of the fleet-flagship being in the battle line. During the approach, the principal disadvantage is the lack of freedom of manoeuvre, thereby curtailing the C.-in-C.'s scope for personal observation. The chief argument of those who advocate that he should be in the air is that he will thereby have a much better opportunity for such observation. But this requirement can at least be improved by providing a fleet-flagship with a speed in excess of the battle fleet. Once the main fleets are engaged, the disadvantages of being in the line are of a different nature: the shattering noise and confusion in a battleship in action must be indescribably disconcerting to a man who is endeavouring to concentrate on, consider, and follow every movement of both his own and the enemy's fleet and to make rapid decisions consequent upon them; it is but natural that the C.-in-C. and his staff would function better if relieved of such physical and mental strain. Again, communication from a ship in the line, whilst actually engaged, may be difficult: smoke may obscure visual signals; shells may damage vital W/T apparatus. A capital ship engaging an enemy with her main armament and surrounded by shell splashes, even if she is not being actually hit or damaged, is not an ideal observation point. By being in the line, the C.-in-C. places himself in the thick of the fray and therefore exposes himself to the maximum amount of enemy gunfire; yet it is, unquestionably, of importance that he should not be endangered more than is avoidable. There are many examples to show the confusion which results in a fleet when it is deprived of its leader and principal brain: the damage to the "Lion" at Dogger Bank had dire results; Nelson after the Nile wrote: "I think if it had pleased God I had not been wounded, not a boat would have escaped to tell the tale."

Whether ships have sails or steam we see that the drawbacks to

being in the line are very similar to those which prompted the words of de Chavez in 1530, and the experiments of Rodney and Suffren.[1] What would we lose by taking the Commander-in-Chief out of the battle-line? To-day, as of yore, the battle fleet would be deprived of his leadership and, in a large measure, of that personal direction which we have suggested is of so much importance in view of the vital nature of the battle-fleet engagement. In spite of his experience at the Nile, Nelson did not hesitate to lead his fleet at Trafalgar and place himself in the thickest of the fray. This matter of personal direction has been continually stressed throughout this article: it is suggested that if it is sacrificed in favour of other advantages we shall return inevitably to those rigid tactics, akin to parade-ground manoeuvres, which the very nature of sea warfare renders ineffective. If the C.-in-C. provides leadership and personal direction to a part of the battle fleet, the commanders of other squadrons can be given freedom to handle their squadrons in the most effective manner. If he were stationed on the disengaged side of the line, he would be tempted to try and control the movements of every squadron to a greater degree. To take a hypothetical example—if the C.-in-C. were in a ship which is not in the line, can we be sure that he would observe the moment that the enemy flotillas launched their attack with sufficient accuracy to be able to indicate to the battleships when, and in what direction, they should alter course in order to avoid the torpedoes? It may be argued that this could well be left to the senior officer of the battle-squadrons: when a torpedo attack was launched the latter would be guided by the instructions in force at the time and, for example, alter course away. But, surely, there is a vital flaw in such an argument: the C.-in-C., who, it must be remembered, is in command of the whole conduct of the fleet, might be faced with his battle fleet suddenly turning away at a moment when it was clear to him that such a move would mean loss of contact with the enemy owing to decreasing visibility; it might be a clear case for disregarding the instructions and turning towards the enemy. Even to-day with our vastly improved communications, can we neglect the fact that it may still be necessary "to follow the Admiral's motions?"

If it be accepted that the C.-in-C. is not to form a part of the battle line, it would appear best for him to use a cruiser specially adapted as his flagship, since it is unlikely that we shall be able to spare one of our few capital ships from the battle line for many years to come. In any event, if the fleet-flagship is not to be in the line, it is unnecessary for her to have a capital-ship armament.

[1] See Part I in the JOURNAL for August, 1936.

There is the alternative of constructing a special fleet-flagship which would embody as far as possible all the requirements which we have suggested are necessary. One can even conceive some new type of vessel combining the qualities of a capital ship and an aircraft-carrier. But is the whole problem of such importance as to warrant such an expensive solution ?

A Suggested Solution

An Italian naval authority wrote in 1914 :—" It would be a waste of time to discuss a return to the custom adopted by the French in the sailing era after de Grasse was made prisoner in the battle of the Saints : that is the system of placing the Commander-in-Chief in a light ship outside the line ; it is enough to consider that the directions of the Commander-in-Chief cannot solely be communicated by such orders as he will be able to give during an action. The essential condition which must be fulfilled is the following :—The Commander-in-Chief's duties of directing should first and foremost consist in the fact that his ship should be that by which all the other ships of the fleet are regulated by virtue of his manœuvres and the orders given previously to the action. . . . From this it is clear that the Commander-in-Chief should be on board a battleship, and that he should have the central squadron under his immediate command ; in other words it is best for the Commander-in-Chief to be in the centre and leader of a division composed of the faster battleships, in order to use them to what he may consider the best advantage.

" We do not deny by this that in cruising order, and in spreading to take a better view of the conditions, it is often advantageous for the Admiral to remain outside the line ; nor do we deny that it is best that he should remain independent of the manœuvres of his ships on some occasions before opening fire. But in the actual action his ship should be in the position of commander of the centre squadron."

" It is best for the Commander-in-Chief to be in the centre and leader of a division composed of the faster battleships . . ." This was Howe's solution of the problem ; it was also Beatty's, after he had assumed command of the Grand Fleet, though he never had an opportunity to prove it in battle. Suppose Jellicoe had been able to use the " Queen Elizabeth " as his flagship at Jutland, and had been stationed a few miles ahead of his battle fleet : would not the uncertainty which arose through errors in reckoning have been cleared up earlier, and thus made the problem of deployment easier to solve ?

Shortage of capital ships and peace dispositions make it impracticable to solve the problem in the most effective way at present. Further,

the " Queen Elizabeth " class no longer have an excess of speed over the battle fleet. It is to be expected that a fleet action will be fought at the maximum speed of the ships engaged ; hence the flagship requires a speed of at least 26 knots. Possibly our new capital ships may have this speed. In the meantime can we spare the " Hood " from the battle-cruiser squadron for this duty ? She appears to be the vessel which is most suited to serve as the flagship of the C.-in-C. if and when the British fleet dispositions should result in the formation of a " main fleet." With such a flagship he would have that freedom of manœuvre which would permit him to take up a position during the approach best suited for observing its development, while, when action was joined, he could drop back and control it from any position he wished. When the battle fleets became engaged he could remain on the disengaged side if he so desired ; yet his flagship would be fit to join the battle-line as soon as he considered that his presence there was necessary.

If the helicopter becomes a practical proposition at sea, this flagship could be provided with aircraft which would permit the C.-in-C., if he so wished—or more probably members of his staff—to take to the air in order to obtain that long-dreamed-of bird's-eye view.

This appears to be the most effective compromise to a difficult problem—one which will enable the Commander-in-Chief to use his flagship in whatever way may seem best as an action develops.

APPENDIX.

An Administrative Flagship

On 1st January, 1922, a new organization for the United States fleet made provision for an Administrative Flagship—a specially fitted ex-army transport, the " Columbia " ; and a Tactical Flagship—the battleship " Maryland," one of the units of the Battle Force.

As far as command in battle was concerned, there was no intention of departing from the established custom of using a ship-of-the-line—hence the relegation of this matter to an appendix ; but this review would not be complete without some account of what was, as far as is known, a unique experiment. A full account was given in *The United States Naval Institute Proceedings* for August, 1922, by Captain J. K. Taussig, U.S.N.—the first and only officer to command the American fleet's Administrative Flagship.

Captain Taussig said :—" The question as to whether or not the Commander-in-Chief should be in the front battle line during an engagement is not involved in the pros. and cons. concerning an Adminis-

trative Flagship. The value of such a ship depends on whether or not, in the preparing and training of a fleet for battle, and in the long strategic campaign which must of necessity precede a fleet battle, should there eventually be one, the Commander-in-Chief is in a better position to develop a more efficient fleet and to carry on a more logical campaign, than if he were tied to a slow moving battleship."

There was apparently considerable opposition to this innovation. Captain Taussig attributes this to conservatism, adherence to tradition, and dislike of the idea of using a vessel other than a fighting unit for the purpose. The arguments which overcame this obstruction may be summarized :—

(a) The Commander-in-Chief of a large fleet, the units of which may be geographically scattered, must for administrative purposes be free to go wherever and whenever he pleases : he should not be tied down to the battle force, scouting force, or control force. The necessity for and the importance of the fighting auxiliaries, especially the cruisers, have not usually been appreciated by the officer in chief command afloat owing to his intimate connection with the battleships.

(b) Being attached to one of the subdivisions of a fleet is not conducive to proper administration of the fleet as a whole ; does not permit the Commander-in-Chief wide enough latitude in conducting a strategic campaign ; may be of considerable embarrassment to him in a fleet action ; and narrows his viewpoint.

(c) No fighting ship can accommodate the Admiral and his staff without crowding.

(d) There is insufficient room in a fighting ship for training officers at " the tactical game board and the chart manoeuvre."

(e) It is illogical to place the Commander-in-Chief in a vessel that is the most costly to move from place to place ; that interferes with the proper training of that ship ; and which, by detachment, diminishes the fighting strength of the fleet. The Commander-in-Chief should be so situated that he will not be forced through economic or other reasons to refrain from visiting any part of his fleet and to go to any base in order that he can inspect and make effective plans for the future.

(f) There is not room in a battleship for all the wireless transmitters and receivers that the Admiral's communications require.

Such are the reasons for this innovation given by Captain Taussig. No detailed criticism of them need be attempted ; but the first reason is surely rather astonishing and the remainder would hardly appear sufficient to warrant the change.

Nevertheless the Navy department took over the army transport " Great Northern," re-named her " Columbia " and converted her for this purpose. She was a vessel of 12,500 tons displacement, 525 feet long, maximum speed 23 knots, and capable of steaming 9,000 miles at 15 knots. It was intended to install a battery of four 6 in. guns and four 3 in. H.A. guns, but that was never actually done. As regards wireless equipment " it was more complete with facilities for listening in on more tunes than any previously installed on any vessel in the world."

Captain Taussig does not enlighten us on, perhaps, the most interesting aspect of this experiment. At what stage of any operation was it proposed that the C.-in-C. and his staff should transfer from the Administrative Flagship to the Tactical Flagship ? It might be extremely awkward for him in the event of weather unsuitable for boatwork.

The experiment only lasted a few months and Captain Taussig says :—" It is unfortunate that after spending considerable time and money fitting up the best ship to be had for the use of an Administrative Flagship, commercial and political interests forced the navy to give it up." This may be true, but it is significant that the U.S. Navy has not yet, after fourteen years, attempted to repeat it.

NOTE.—The principle involved in an Administrative Flagship has not been confined to the United States experiment. To a large extent it is to be seen in the provision of a house and offices ashore for the C.-in-C. and his staff on certain of our own naval stations abroad—notably at Malta. The need for him to have a more economical form of transport than his battleship flagship in order to visit various parts of his command was one of the chief arguments for providing him with a yacht.

As a small example of a system of dual " flagships," the S.N.O. of the Dwina Flotilla in 1919 and his staff were accommodated in a river steamer ; but he transferred with a small personnel to a fighting craft—gunboat or monitor—for action. The staff of any detached naval force of this kind, and still more of a large fleet, necessarily includes a number of administrative and technical officers who are not indispensible in action, but who might well be so afterwards. There is, therefore, much to be said for the C.-in-C. and his *whole* staff being accommodated in an Administrative Flagship, which is far more mobile than quarters ashore. He, with his operational staff, would naturally transfer to his Tactical Flagship before the fleet left its base to meet the enemy.

It is not quite clear how the American Administrative Flagship was meant to function ; but it would be a mistake to conceive that a C.-in-C. could cruise with the fleet in this or any other " special " flagship and transfer to a battleship when the battle fleet was about to engage. Apart from weather conditions, it will be recalled how Beatty at the Dogger Bank and Von Hipper at Jutland had the greatest difficulty in transferring even to another ship in the line, after their flagships had been disabled : that might have been possible in the leisurely days of sail, but not under the conditions of a future naval action.—EDITOR.

FLYING OPERATIONS IN HUDSON STRAIT

By Flight-Lieutenant B. G. Carr-Harris, R.C.A.F.

THE history of Arctic exploration might well begin with Pytheas, the Greek navigator who, about 330 B.C. sailed from Massilia, now Marseilles, and discovered the British Isles and the coast of Norway, where he secured information regarding lands still further to the North. It is believed that Ericsson almost certainly landed on the coast of North America about the year A.D. 1000. Columbus's belief that a passage westward to Asia existed, resulted in his voyage of 1492. Six years later, Cabot on his second voyage coasted as far North as the Hudson Strait. After the fact of a continental barrier to a direct westward passage to the Orient was accepted, rumours of a North West passage became current, and exploration continued. In 1576, Frobisher reached Baffin Island, and several years later Davis explored the northern coast of Baffin Land. In 1610, Henry Hudson entered the Strait and Bay which now bear his name. On the return voyage, history tells us, mutiny broke out, and together with his young son and sick members of the crew, he was cast adrift in a small boat and was never heard of again. Many expeditions followed, each one penetrating a little further into the interior of this vast Arctic archipelago. On the present map we find such names as Button, Baffin, James, Foxe, Parry, Ross, McClure, Franklin, Greely, McClintock, Peary, and many others. Ross discovered the North magnetic Pole at Boothia Peninsula in 1831. Peary was the first man to reach the North Pole in 1909. Each explorer added something new to world geography. As a result of their combined efforts, we now have a fairly accurate map of the Canadian Arctic, and are in possession of an abundance of information about the nature of the country and its inhabitants, and its vast mineral and fur resources.

In recent years still further information has been added through aerial exploration. Byrd flew over the North Pole in 1926. In the same year Amundsen, Ellesworth and Nobile flew across the top of the world from Spitzbergen to Alaska in a dirigible. In 1928, Wilkins and Eielson made the same journey by aeroplane. These men have blazed the trails for the short Arctic air routes of the future between the continents.

For many years the Canadian Government has recognized the

tremendous advantages afforded by a short sea route to Europe via the historic Hudson Strait. A sea port in the North was greatly to be desired to open up the North West, to provide an outlet for the vast quantities of western wheat, and from a national defence point of view : the port finally chosen was Fort Churchill, Manitoba, on the Western shore of Hudson Bay. After the War, the Hudson Bay railway was completed from The Pas to the Bay, over very difficult country. It runs for many miles over tundra and perpetually frozen muskeg. Grain elevators and wharves were constructed at the port, and the harbour at the mouth of the Churchill river was dredged to a sufficient depth to take the largest ocean going freighters.

Although the Hudson Bay Company had been using the Hudson Strait route for two hundred and sixty years, more definite information for modern navigation was required. As a result the Hudson Strait Expedition was sent North in 1927, to—

(i) Procure by means of aerial photography exact information on ice conditions, and to establish an absolute time limit for marine navigation through the Strait.
(ii) Test the feasibility of the use of aircraft as an aid to navigation through the Spring and Fall ice.
(iii) Test the suitability of bases, aeronautical and other equipment necessary for air operations, with a view to establishing operational bases in the Hudson Strait.
(iv) Establish three D.F.[1] wireless stations.
(v) Obtain metreological information.

The general plan of operations as worked out by the Advisory Board made provision for three bases, one to be established at the eastern entrance of the Strait, to be known as Base A, one at the western entrance, Base B, and one midway between the two, Base C. Three fixed patrols were to emanate from each base in such a way that the whole Strait would be under observation.

On 11th February contracts were let for the purchase of all necessary equipment. Six Fokker Universal high wing monoplanes were ordered from the Atlantic Aircraft Company in New Jersey, and one D.H. Moth was purchased in England. All aircraft were to be provided with wheels, floats, and skis, and an adequate supply of aircraft spares was obtained. A contract was also let for building materials, all cut and fitted ready to set up. The general equipment of the three bases was practically the same, and the following list is characteristic of any base :—

2 Fokker universal aircraft with spares, including one main plane and one Wright J.5 engine.

[1] Direction Finding.

1 30-ft. motor launch.
1 Fordson tractor.
7 buildings, comprising officers' dwelling, men's dwelling, radio building, store house, blubber house and two wooden hangars.
Bricks, sand, and cement in barrels.
Radio apparatus—two petrol engine generators—two 150-ft. steel masts.
326 drums of petrol (45 gallons each).
38 drums of coal oil.
125 cases lubricating oil.
160 tons of hard coal.
Stoves, beds, bedding and clothing.
Provisions for 18 months.
2 lorries and 1 Vercheres skiff.
Guns, rifles, flares and ammunition.
36 cases of rum.

All equipment was assembled at Halifax where loading was completed on 16th July. Two ships were to transport the expedition North—the Canadian Government ship "Stanley"—a small ice breaker, to accommodate passengers, and the S.S. "Larch"—a freighter of some 4,000 gross tonnage, to carry the equipment and a sufficient quantity of coal for the two ships.

In February volunteers were called for, to accompany the expedition. In the selection of personnel unmarried men were given a certain degree of preference. We assembled at the Royal Canadian Air Force Station at Camp Borden, Ontario, two months before sailing and underwent training for our respective jobs, and in addition we were given a short P.T. Course and received several lectures from a hardened "Mountie" of the North. Personnel were allocated to bases, and each base contained 2 R.C.A.F. officers; 1 medical officer, 1 radio engineer, 1 assistant radio engineer, 1 wireless operator, all civilians; 2 fitters and 2 riggers, R.C.A.F.; 1 signals N.C.O., R.C.C.S.; 1 constable, R.C.M.P.; 1 storekeeper, 1 cook, 1 assistant cook, civilians; making 15 in all or 45 for the three bases. The writer was posted to "C" Base, the headquarters of the expedition, which was to be located at Mid-Strait. When training was completed we proceeded by rail to Halifax and embarked.

The ships sailed on 17th July. After ten days at sea in very rough weather, the Button Islands were sighted, and early on the following day we crawled from our bunks and gazed through the portholes to see for the first time the shores of the historic Hudson Strait. Not till then did we realize what a great task awaited us: the coast line was rocky and precipitous; treacherous shoals skirted the shores, over which white

spray was flying ; how were we to land all the heavy and cumbersome equipment without damage or loss ? We had but one small scow, a motor launch, and a few surf boats with which to work and no docking facilities existed. It seemed at the time an almost impossible task, when we considered the dimensions of the huge aeroplane cases, the hundreds of drums of petrol and oil, the tractors, spare aero engines, the timber, bricks and cement for twenty-one buildings, 180 tons of coal, and so forth.

For three weeks we steamed along the North and South coastlines, using the Moth seaplane to carry out short reconnaissance flights to explore the fjords and islands. The little machine was lowered and hoisted from the aft deck of the " Stanley," sometimes under very trying conditions. It proved invaluable in locating the three bases ; to explore the same area by ship and motor boat would have taken several months. An amusing incident occurred on one of our reconnaissance patrols. When passing over the Lake Harbour Mission on Baffin Island, I noticed the local natives scattering in all directions, then running towards their little church. After landing we were told by the H.B. Co. manager that the Eskimos had mistaken us for the Almighty returning to earth. When their fears were dispelled they reappeared and at last ventured out in their little skin boats and surrounded the machine at the buoy, gazing with awe at the white man's " Kyak " which flew through the air. Unfortunately, the " Almighty " was wrecked in a storm two weeks later, and sank while at anchor.

By late autumn the three bases had been duly established at Port Burwell, Nottingham Island and Wakeham Bay. We had had good weather on the whole throughout the summer and on only a few occasions were unloading operations held up. The small scow had been our salvation : it took the heaviest crates with ease, and was not difficult to manage ; it received tremendous batterings against the shoals and jagged rocks, nevertheless its bottom remained intact. The large petrol and oil drums were floated ashore, which saved us considerable man-handling. No equipment was damaged or lost. Wireless masts were erected and communication was established between the three bases and between " C " Base, the expedition headquarters, and Ottawa. Living quarters were banked with moss, and stoves erected : our new abode was ready for occupation. It was a great relief to leave our cramped quarters on board ship, where we had lived for five months, and our new quarters were spacious and comfortable having six anthracite stoves per dwelling, a library, hard wood floors, a large Marconi radio and a tin bath tub. The tub was in great demand at first, but after " freeze up " things were quite different, for, in order to

have a bath, one had to dress up in furs, walk 200 yards to the frozen river, fill buckets with chipped ice, return to quarters, thaw the ice, then heat the water. This process had to be repeated several times until sufficient hot water was obtained. It is not surprising that, under such conditions, a bath became quite an event.

We were now quite prepared to face the long cold winter, which was rapidly approaching. At Wakeham Bay, in addition to ourselves, there were eighty Eskimos camped nearby, who moved into their igloos after "freeze up." Early in November all hands gathered on the beach to bid farewell to the ships. Our spirits rather sank as they disappeared into the morning mist: we were cut off from civilization for many months to come.

Up to this time, flying had been in progress for some weeks. Our Fokkers functioned well on floats despite the heavy seas encountered. The P.3 compass proved reliable, although there was a correction of 50° variation to be reckoned with. In addition to the P.3, aircraft carried one Bumstead Sun Compass, and one Earth Inductor Compass. Excellent results were obtained with our C.T.21A wireless sets. Both voice and key were available. We could work the ships and shore bases with no difficulty. When on patrol communications were kept up every five minutes with the base.

Daily patrols were carried out when the weather permitted to spot the first appearance of ice in the Strait. On 16th November we were rewarded by the first report of light ice off Nottingham Island. A few days later the bays at the bases froze over, and we were unable to fly using pontoons. Skis were then fitted to the six aircraft, and patrols continued on 23rd November when it was reported that the Strait was still almost clear of ice. Two weeks later heavy ice started to appear, and large hummocky pans were reported daily. By the middle of December the Strait had become a seething maelstrom of heavy floating pans and navigation was definitely closed, even to ice-breaking vessels.

At the first appearance of ice, photography commenced. Oblique exposures were made while flying on a direct course at a constant altitude, using the same angle of deflection and allowing for a 60 per cent. overlap. This method was adopted so that the nature of the ice could be interpreted stereoscopically. Each exposure was pin-pointed on a hydrographic survey chart having a superimposed grid, and on the completion of each patrol, pilots handed in a detailed report on the ice conditions seen in his area. Patrols usually lasted for a period of two and a half hours, this being the limit of the pilot's endurance in an open cockpit. Although there was a hot air heater which kept one's feet, hands and body fairly warm, it was impossible during long flights to

keep the face from frost bites, in sub-zero weather. The coldest temperature registered by strut thermometer was 60° F. below zero at 8,000 feet. An Eskimo was carried on all patrols to act as a guide and to build snow houses in case of a forced landing.

During the winter, flying periods were limited owing to the very short days and extremely bad weather. Flying was done during the midday twilight, and photographic results were not very good. The temperature remained below zero for three months on end; water froze to a depth of 6 feet; and flying conditions were most difficult: hangars had to be shovelled out of snow drifts; runways had to be constantly levelled and packed down by a score of men on snow shoes; engines had to be heated and filled with hot oil before they could be started; if an aircraft rested for any length of time on the snow or ice, the skis would freeze solidly to the surface. On several occasions throughout the winter great anxiety was felt when pilots failed to return from patrol. The first incident happened in December. Flight-Lieutenant Leitch when he was returning to his base at Nottingham encountered heavy snowstorms over the Strait. He flew on for a sufficient length of time to reach the base by dead reckoning, and descended; but he could see no sign of the island; open water lay beneath him, and the aircraft was fitted with skis. He flew on for several minutes, just over the water, when fortunately he saw a large floe of smooth newly formed pan ice. As he had little hope of finding the base and the petrol was running low, he made up his mind to chance the thin ice, he circled the floe and landed. The ice held, although it measured only 4 inches. Wooden rods were placed under the skis, and the oil was drained and stowed in the cabin. The crew spent the night on the drifting ice, keeping warm by exercise and hot rum, and at dawn the weather was clear. The oil was heated by blow torch, and luckily the engine started without being heated. No land was sighted after take off, but the pilot knew that they had drifted many miles eastward, so he flew on a north-westerly course which soon brought him within sight of the island. When he landed, he had only a quart of petrol in his tanks.

In January, Squadron-Leader Lawrence was missing for nine days. He was forced down in a blizzard at Sugluk and had to remain there living on very scanty rations until the storm subsided, and a rescue machine arrived to help dig him out.

The third and last incident occurred in February, and is one that Flight-Lieutenant Lewis will, no doubt, never forget. On the 17th of the month, when returning from the Baffin Island patrol to his base at Port Burwell, he was caught in a raging blizzard. He flew by instru-

ment, and attempted to reach the base by dead reckoning, eventually passing directly over it. Rockets were sent up but were not seen. The pilot became hopelessly lost. After five hours in the air we received his last wireless message, which read, " Lost, cannot find base, tanks nearly empty, am landing, Cheerio." Aircraft from the other bases proceeded to Burwell when the weather had cleared, and a thorough search was organized, and carried out when visibility permitted. Storms raged for days on end and the thermometer fell to 35° below zero. The prospects of a rescue became more and more slender. On the evening of 1st March all hope was abandoned and inventories were made of the personal belongings of the missing men. At midnight the door opened, and two ghost-like figures, with their faces black with frostbites and a two weeks' growth of beard, stumbled in, smiling weakly. They were put to bed, where they remained under the doctor's care for two weeks. The third member of the party, an Eskimo, trudged off to his igloo. On the next day we heard their story. A blind landing was made on rough hummocky ice, but, although the aircraft was damaged beyond repair, no injuries were sustained by the crew. Hummocks 20 feet high surrounded them. On the following day they abandoned the aircraft after removing the compass, air raft, asbestos engine cover, and emergency kits. After walking eastward all day, open water confronted them. Not till then did they realize their position to be many miles out in the Atlantic, so on the next day they retraced their steps. Two whole days were thus wasted. On the afternoon of the 20th, the sky cleared and visibility was excellent, and from the top of an ice hummock they could faintly see what looked like a range of mountains far to the West. The weather soon closed in, and from the 21st to the 24th blizzards raged. A compass course was followed, but little progress was made. Numerous open leads were encountered, and were crossed in the air raft, and after the native allowed the raft to drift away the leads were crossed on small pans of ice. Their seal-skin boots soon wore out owing to their continual wetting and freezing, but were reinforced by pieces of the asbestos engine cover. When hard snow could not be found to build a snow house, ice hummocks afforded the only protection. They slept huddled together in the same sleeping bag with the temperature 35° below zero. On one occasion they kept walking all night in order to keep warm. Before reaching land, emergency rations ran out, and they were without food for 36 hours until the Eskimo killed a walrus. Chunks of this animal was eaten before the flesh had time to freeze. On the evening of the 25th they reached land. For three days they struggled northward along the barren coastline, without sustenance of any kind, until the evening of the 28th, when almost on the point of collapse, an Eskimo hunter with a dog team appeared ; frozen fish were

produced, and tea was brewed: the situation was saved. It was estimated that the landing was made 60 miles out in the Atlantic, and that the party had drifted 40 miles to the southward in the course of their travel, and that " Fokker HF " now rests beneath the waves somewhere in the Atlantic off the coast of Newfoundland.

One aircraft was left at Base " A " to replace " HF," and winter patrols continued until the spring. Squadron-Leader Lawrence returned to Base " C " by dog team, having carried out a ground reconnaissance of ice conditions in Ungava Bay. His party travelled 650 miles, and the journey took 36 days.

At the end of May pontoons were again fitted to the aircraft, but, although the bays were free of ice, the Strait was still blocked. In mid-June the C.G.S. " Montcalm," an ice breaker, arrived at the eastern entrance; wireless communication was established, and we were able to guide the ship through the open leads. She reached Wakeham Bay in record time, having broken very little ice. The value of aircraft as an aid to navigation in the Strait was definitely proved. Mail was distributed and fresh provisions landed, and we enjoyed a meal of fresh meat and vegetables—the first for more than twelve months. Photographic patrols continued until 3rd August, on which date only a few scattered icebergs were reported. Operational flying thus came to an end.

Loading operations were soon in progress, and on the 28th of the month all equipment was stowed with the exception of the five aircraft which we had intended to fly South, for which purpose petrol caches had been established at various points along Hudson Bay and in Northern Ontario. Aircraft from the three bases rendezvoused at Cape Wolstenholme at the western entrance of the Strait on the afternoon of 28th August. We spent the night at anchor, remaining on board all night, in order to safeguard the machines and to get an early start. At dawn, when we attempted to get off, the sea was fairly choppy, and one aircraft lost a float and crashed. The crew were rescued before it went to the bottom, although two members had to swim for it when an air raft collapsed. Another machine damaged its float and undercarriage fittings, and was forced to land again. A third was unable to get off owing to engine trouble, so we held a consultation on shore and decided to cancel the flight home. Our machines had received very hard usage during the past twelve months; all float fittings were strained and spares were exhausted. In consequence the two remaining serviceable aircraft returned by air to Wakeham Bay, to be shipped out by boat; the other two were dismantled at Wolstenholme, to be picked up later.

On 21st October we docked at Halifax. All the members of the party were in perfect health, and morale was at its peak, despite the fact of our disappointment at Cape Wolstenholme. Before us we had our families, our friends, three months' leave and a good accumulation of double pay. Behind us we had a grand experience, not soon to be forgotten.

It may be of interest to give a short summary of what the expedition accomplished. In the first place all the information asked for was obtained. We found that the Strait was open for navigation from approximately mid-June until mid-December. Without the aid of air observation this limit would almost certainly be decreased by some four or five weeks. Secondly, the nature of the ice, the thickness and direction of drift is now known, the eight thousand photographs taken providing a permanent record of the conditions existing day by day throughout the winter months. On being viewed stereoscopically they can be clearly interpreted. Drift was established by dropping markers on the floes and pin pointing their positions periodically. Thirdly, three D.F. W/T stations were permanently established at Port Burwell, Cape Hopes Advance and Nottingham Island. Again, various experiments and tests were carried out on aeronautical equipment and flying clothing during the 820 hours flown. Lastly, over 2200 meteorological readings were recorded. A report covering the three bases was transmitted by W/T daily, to the Dominion Meteorological Office in Toronto, and this information was of great value not only to the Canadian forecasters, but to Washington and the whole North American Continent. Water temperatures and ice depths were taken twice daily at each base, which often meant cutting through 6 feet of ice.

Many lessons were learned in establishing air bases in out-of-the-way places, and in carrying out flying operations in northern latitudes. The following are the most important :—

(i) Air reconnaissance is essential in locating suitable bases. Had we been denied this, I am sure that bases would never have been formed in the time available, and the expedition would have failed.

(ii) Ship stowage: if equipment is not loaded in the correct order for unloading, endless confusion will result, and many valuable days lost.

(iii) Tractors and heavy lifting tackle are invaluable, and small scows are far better for landing equipment than surf boats.

(iv) Never leave aircraft at moorings if it can possibly be avoided.

(v) Always carry at least three weeks' rations, a primus stove and an air raft or collapsible boat when flying.

(vi) Take along an Eskimo if you can ; they are excellent guides in case of a forced landing. They love flying and take to the air like a seal to water.

(vii) Above all, don't try to beat the weather.

It was not in vain that so many of the early navigators lost their lives seeking a North-West passage, for they blazed the trail for further discovery and development. Civilization is now pushing slowly northward in quest of rich mineral and other resources. Already large deposits of pitchblend have been discovered in the Great Bear Lake district, and radium is being produced. Further North other mines are opening up each year. New discoveries of gold, copper, and silver are constantly being reported. Oil wells now exist in the Fort Norman area, the prospectors scattered throughout the length and breadth of the land say that the country has not been even scratched. Most of the transportation work is being done by air, and civil aviation is booming.

The Hudson Bay Route has helped greatly to open up the North country. Fort Churchill has grown from the wilderness of a few years ago to a thriving seaport town, and the number of steamers laden with grain passing through the Hudson Strait is increasing each year. Let us hope that the development of these erstwhile unknown parts of the Empire will be of increasing value, not only to Canada, but to the British Commonwealth of Nations.

THE GERMAN ARMY MANŒUVRES, 1936

By Lieut.-Colonel H. de Watteville, C.B.E., late R.A.

THE grand manœuvres of the German Army for 1936 took place in Hesse, and lasted from the 21st to 25th September. They were of some importance, for they were the first exercises to be held on so large a scale since 1913. In addition, they were the first manœuvres of the kind to be attempted by the new German army; whilst they were also the first at which really modern military armament was to be used on a large scale by troops—at any rate in public. Close on 50,000 men were in the field. The troops engaged on the two sides were: *Blue*, IX Army Corps, composed of 6th, 9th and 19th Divisions; *Red*, V Army Corps, composed of 10th and 15th Divisions. The former, commanded by General Dollman, came from the Cassel area; the latter, commanded by General Geyer, was brought from Stuttgart. The manœuvre area was roughly marked by the towns of Eisenach–Marburg–Frankfurt–Schweinfurth; this represents a square of 80 miles wide; but nothing like this whole area was used.

The pith of the exercise was an outflanking movement in an imaginary "race to the sea." As the troops taking part in the exercise were both flanked on either side by phantom forces whose movements were announced, the manœuvres really took place in a vast corridor, with either force virtually unable to do very much more than advance or retire. The whole scheme had the advantage of extreme simplicity; while it possessed the great merit that the IX (Blue) Corps, at the start of the exercise, had its three divisions disposed in depth: the 9th Division was leading, the 19th Division stood twenty miles in rear, whilst the 6th, being brought into the area by rail, was actually detraining still further back on the opening day. These dispositions allowed of an interesting series of situations; it gave the G.O.C. Red force initial superiority, of which he availed himself to the full in order to attack. The arrival of the second Blue division stabilized the battle front until the third, 6th Division, by a march of thirty to forty miles, arrived in time to permit Blue to make a full-dress attack on Red, who was falling back on to an entranched position. There is, however, no need to study this side of the manœuvres any further, for their main interest lay in the troops, their bearing, their armament and their tactical methods.

The German army of to-day represents the new army raised by compulsory universal service. The *Reichswehr*, the professional long-service army of two years ago, has vanished, having been absorbed into the new army in the shape of officers and non-commissioned officers. The rank and file seen on these manœuvres were, therefore, men with only one year's training behind them. They will now do a second year's service before passing to the reserve, whilst this year's annual contingent of recruits is about to enter the ranks. The men look on the young side, but physically are well developed. Incidentally they are, almost to a man, clean-shaved, quite a departure from the army of pre-war days. There is a shortage of officers: no company or battery on these manœuvres ever seemed to show more than two. But of their efficiency there can be no possible doubt. The N.C.Os are obviously below establishment; they are, however, of an excellent stamp, professionally most competent. The discipline of the men seemed to be above reproach. The German Army of 1936 promises to be in no way inferior to that of 1914. By abolishing the *Reichswehr*, as was done at the time of the formation of the new army, Germany was unquestionably running risks. There is, however, no doubt that the change was most carefully prepared, for the aspect of the troops is one which conveys the impression of both the old and new elements having fallen into their places exceedingly well. In billets and on the march, everything pointed to complete control of the men by their officers and N.C.Os. There were manifest all the symptoms of a thoroughly good spirit among the troops, as well as familiarity with life in the field. The *Reichswehr* has certainly done its work well, in that it has successfully passed on to those young soldiers all the knowledge and methods of the old pre-war army. Incidentally it should be mentioned that the traditions, titles and trophies of the old army, which were preserved in the *Reichswehr*, have now been passed on to the new creation. There can be little doubt that the new regiments will be inspired by the quality and history of their predecessors.

In the field, the tactical methods pursued by the new army are entirely practical and modern. Infantry advances showed a flexibility and use of ground that was reminiscent of similar exercises at Aldershot. Artillery, always firing from concealed positions, was difficult to locate. The reason for this might perhaps be largely attributed to the fact that the field gun seems to have disappeared from the armament of the division. The divisional artillery on view consisted of a regiment of 4.2-in. howitzers, thirty-six in number—horse-drawn—and some medium artillery: the latter consisted, as far as could be seen, of obsolescent 4-in. guns or 6-in. howitzers, but mechanically drawn. There is, however, a rumour that a new weapon, a combined "gun-howitzer," is to form the equipment of divisions; if this be correct a rearmament of

the field artillery, partial or complete, may be in prospect. The corps and army artillery has been considerably strengthened and is being rearmed. A very fine 15 cm. (6-in.) high-velocity gun could be seen in the hands of corps artillery batteries, and it is understood that there are to be many more of these guns with the troops before long. The gun itself travels on a long cradle, swung at either end on a limber, and thus makes a very serviceable four-wheeled vehicle. The carriage is moved separately. These batteries are drawn by highly efficient artillery tractors.

All the troops were heavily camouflaged with branches or bits of foliage stripped from the trees. Every man had some greenery or even a wisp of hay fastened to his steel helmet, for this latter head-covering was universally worn on manœuvres. As the area in which the exercises were held was thickly dotted with woods, it could be seen that cover from the air was studiously sought. Every copse was utilized for this purpose; the marked scarcity of hedges greatly facilitated movement in and out of woods, as well as the passage from one cover to another. When no wood was available, vehicles always seemed to stand as close as possible alongside a tree, bush or hedge, if these were at hand. Artillery was frequently covered with nets or horizontal canvas screens. It may be said that German troops are well trained in the use of cover against air observation, although nothing very new could be detected in their methods.

Two remarkable features of the new German division need mention. The first of these is the number and ubiquitous distribution of the new anti-tank artillery. The gun itself first requires a word of explanation. It is a 2½-pr. mounted on a shielded carriage; the latter (in the later types at least) possess a split trail, thus giving the gun a wide arc of traverse, and is mounted on rubber-tyred wheels. The whole is drawn by a four-wheeled tractor. Judging from the size of the tractor, and the number of vehicles not employed in hauling guns, the ammunition supply of these guns must be on a generous scale. The actual distribution of the guns in the division seemed to consist of one group of three companies (thirty-six guns) at divisional H.Q., together with a section allotted to the divisional reconnaissance unit. Fractions of the H.Q. group were to be seen everywhere. It is clearly a most elastic unit, designed to be split up and allotted to any part of a marching column, or of an established front line. On approaching the latter from the enemy's side, it was normal to find, first an infantry sentry hiding behind some natural feature or bush; next, 150 yards further back, a heavily camouflaged anti-tank gun well off the road. The mobility of these little guns is remarkable; even on the worst of by-roads in the manœuvre area or across country they could travel at a round 20 m.p.h.

The other outstanding feature of the new division is the divisional reconnaissance unit, a mechanized creation of most modern type. At the head of the unit is a company of armoured cars, four-wheeled at present, though it seems probable that they may be either reinforced or replaced—at any rate partially—by heavier six-wheelers. Two companies of infantry, at present conveyed in lorries, but which may eventually be mounted on motor bicycles and side-cars, support the armoured cars. As light mobile artillery for this unit, there are an anti-tank gun detachment and a light infantry mortar section. Lastly, there is a machine-gun company. The whole at first sight, appeared to be somewhat of a menagerie of weapons ; in practice, however, the unit proved to be perfectly well knit. It would seem that the whole unit would be pushed forward to reconnoitre ; then, as soon as contact was imminent, the infantry and the machine-gun company would form a screen, while the anti-tank guns and mortars might be employed as circumstances should dictate. The armoured cars, for their part, moved by " bounds " from one tactical feature to another. Such at any rate seemed to be the procedure on the initial day of the manœuvres, when the opposing detachments established touch with each other. But any accurate picture of the work and tactics of these units was really difficult to obtain.

The division, as a whole, is mechanized, but it is surprising to find a considerable number of horses interspersed among the machines. The divisional cavalry squadron having been abolished, a troop has been allotted to each infantry regimental headquarters for reconnaissance and intercommunication. These troops resemble the section of French cavalry reservists allotted to an infantry regiment on mobilization and should prove of real value. Horses next appear in the machine-gun units. These comprise two types of carriages : the first, a four-horsed limbered vehicle on which were set two heavy machine guns on sleigh mountings ; the second, a two-horsed vehicle carrying a single machine gun that might have been fired off the carriage. The former is intended to be employed as a " galloping " carriage to reinforce a threatened point, but its superiority over the two-horsed vehicle is not obvious. In the division on the march horses reappear at several points. How far it is proposed to eliminate animal draught is not clear. But when, as was the case, it is possible to see horses and motors employed to draw similar types of vehicles, the presumption is that the machine will in due course oust the horse.

There are two facts to be emphasized in considering this question ; the first is that the present rearmament of the German forces, embracing as it does no less than thirty-six divisions, is immensely costly. It does

not follow then that what may be seen at present is the definite form that the division may assume in a few years' time. And this assumption gains strength when it is recalled that, as one travelled towards the rear of the division and past its supply columns, the amount of horse-drawn transport increased. There was even a quantity of locally hired transport to be seen that cannot represent a final organization. And mixed with these civilian vehicles there was a mass of gaily painted petrol lorries, labelled "Shell" or "Esso," that tried to hide their bright red and yellow livery under a somewhat inadequate camouflage of fir branches. From the air these must have resembled travelling Christmas trees. All this can only be regarded as an extemporization. On the other hand, German military opinion is persistent in considering a possible Eastern theatre of war. On the muddy plains of Poland and Western Russia the motor, it is urged, may be of doubtful utility. Consequently, with a view to a possible campaign in these parts, the horse must be retained. Such, at any rate, is the plea put forward by competent German officers when the subject of mechanization is pressed.

The whole question of mechanization is, in fact, very much in the air. When German authorities asserted that they are, as yet, in the dark as to the future form of their mechanized units and formations, their statements may be accepted without reserve.

A regiment of light two-man tanks was employed on these manœuvres. On their first appearance, one company carried out a spectacular attack against a strongly held hill. Manœuvring skilfully to utilize cover, their attack was adjudged to be successful, although the casualties allowed against the machines were such that they were put out of action for the rest of the day. In view, however, of the strength of the anti-tank armament of the German division, such a result was not surprising. But in this movement, although, as a matter of fact, they were being employed in prolongation of an infantry attack, the tanks left their infantry far behind. They did not attempt to carry out any serious outflanking movement. The German army obviously possesses an efficient, well designed, two-man tank: it moves smoothly across country and with little noise. Only one breakdown was seen. On the final day of the manœuvres the entire strength of these tanks, 140 in number, was turned over from the Red to the Blue side. They then carried out a somewhat spectacular—though impressive—attack on the Red entrenched position, this being the finale of the exercises. Owing to distance and light it was difficult to follow the movements of the tanks: sufficient to state that the machines appeared to work fast and with cohesion. It should, however, be noted that there was no attempt to match tank against tank, nor were any other machines in the field than the two-man tank. But abundant reports were current to the

effect that heavier machines would soon be in use. There seemed to be much reticence on the subject, and quite comprehensibly so. The prospect seems to be that two types of heavier tanks will be provided, and that these will form the backbone of the three existing—or possibly five—armoured divisions. What the role to be assigned to these divisions might be in war it would be difficult to say. They are as yet obviously in an experimental state, although a portion of a division was exhibited at the Nazi rally recently held at Nuremberg.

The entire mechanical equipment of the divisions is of excellent quality. The motor vehicles allotted to headquarters of infantry units (down to platoon commanders) are strongly built four-wheeled cross-country cars; these have steel-plated sides and have sufficient power to tow another vehicle. Signal and engineer units have a number of these machines, all modified or enlarged to suit the needs of each unit. The motor bicycles to be seen were of different patterns; the first and older type was one adapted from civil life; the second, and more recent, has been designed for military purposes. It is a most efficient and robust machine with a broad, rigid chassis, while the silence of a section of these machines moving at a good speed is such as to render their passage all but inaudible to an observer standing a few hundred yards away to windward.

The anti-aircraft equipment of the division is at first sight rather scanty. But the German principle has been to place the entire anti-aircraft armament under the orders of the air force. So much so that all A.A. troops wear air force uniform. The result is that anti-aircraft defence is regarded from the point of view of areas to be protected. Movements of A.A. units are thus carried out accordingly and seem to be largely independent of that of the divisions, although they were clearly not conducted without reference to the movements of the latter. These anti-aircraft units are certainly most interesting. Their equipment consists chiefly of four-gun batteries, some armed with an 8.8 cm. (3.5 in.) gun of 50 calibres length, fixed to a mounting, capable of rapid travel. The entire battery is mechanized, and as none of this equipment bears an earlier date than 1934 it may be assumed that it is altogether of a most modern type. The battery is fought by some form of electric predictor, either from the guns or from a short distance away. Other units are armed with a small A.A. gun, a light high-velocity $2\frac{1}{2}$-pr. which should also form an efficient anti-tank weapon. It is a miniature of the heavier gun and seems to possess all its advantages. Searchlights accompany the batteries: these are of a most powerful type; the current necessary to work them is generated by large I.C. engines mounted on separate vehicles. Infantry units carry tripods,

intended for the use of light machine guns against low-flying aircraft. These could frequently be seen set up in positions of readiness.

Three army co-operation air squadrons were allotted to either side during the manœuvres. These did not combine with the tanks during the attack of the latter machines. There was not as much low-flying activity in conjunction with troops as might have been expected, only one such attack being witnessed by the writer. On the other hand, a number of bombing attacks took place, one of which at least resulted in a noteworthy air-battle. But information as to the German air units, or of their work on manœuvres, did not appear to be too freely circulated.

Composition of the new German Division :

Headquarters.
3 infantry regiments.
1 armoured car detachment.[1]
1 reconnaissance unit.[1]
Artillery :—
  Headquarters.
  1 regiment of field howitzers (3 groups each of 3 batteries).
  1 medium artillery detachment.
  1 anti-tank company.
1 troop field gendarmerie.
1 signal group.
1 pioneer battalion.

Composition of an Infantry Regiment :—

Headquarters (with 1 troop cavalry).
3 battalions of each—
  3 rifle companies (27 light machine guns).
1 light mortar company.
1 heavy machine-gun company.

[1] These two seemed to work as a combined unit. It is possible that the armoured car unit is as yet incomplete; it might eventually consist of six-wheelers.

THE YOUNG GERMAN

HIS ORGANIZATIONS AND TRAINING

By LIEUTENANT G. F. COOKE, R.A.

"THE common good is more important than your private interests." That is the National-Socialists' motto and is actually a point in their party programme. Their aim is so to educate, organize and train the whole German nation that every soul shall efficiently and eagerly do some particular job for the State. This will fit Germany for their second aim; that the country shall return to her place among, or perhaps at the head of the Great Powers. Their first aim is worth considering in more detail, as it is the most important aspect of Germany's home policy to-day. Firstly the nation must be educated in certain matters. General education in Germany was of a very high standard before the National-Socialists came to power, but it touched lightly on matters political and rather avoided anything military. The National-Socialists have remedied this in their youth organizations.

Jungvolk.—The Junior Youth League is known as the J.V. (Young People) and caters officially for boys between ten and fourteen, although they may join younger if they wish. School attendance in Germany is compulsory from the age of six, and every Saturday is set apart for J.V. parades. Non-members are given "political instruction" in school instead at this time. So it seems that even a conscientious objector can hardly avoid being told what political views he shall hold. Members are expected to give a good deal more of their time than just Saturday to J.V. training, which consists of lectures, parades, marches, physical training and Geländesport, which for want of an exact translation will be called "scoutwork" throughout this article. Scoutwork includes map reading, message writing, development of the powers of observation, judging distance, moving quietly and concealing oneself. Small bore rifle shooting is also encouraged. One can really only judge these various organizations by their appearance on parades and route marches. The J.V. is not very impressive. Indeed, it is hard to imagine how it can turn out boys such as one sees in the senior youth league described below. A J.V. parade is apt to degenerate into a

rather ill-organized procession of small boys—many with no sort of uniform, many obviously under ten years old and with no apparent idea what they are doing. It compares unfavourably with our Boy Scout organization.

Hitler Jugend.—At fourteen the boy joins the H.J. (Hitler Youth) which is the senior youth league, and where he receives training similar to that in the J.V. until he is eighteen. Fourteen is the age at which a boy destined for some trade leaves the national school to do his apprenticeship, whereas one who aims at a University education will have gone to one of the higher schools some years before this. So in the H.J. the young National-Socialist has to find his own time for his training. He no longer has Saturday allotted for it. This must be no inconsiderable inconvenience, and one of the important functions of the J.V. is presumably to make the boy sufficiently keen to keep up his training in the H.J. Parades are usually held on Sundays or week-day evenings. The H.J. provides its own officers—all under eighteen, and so gives a boy valuable experience in command and responsibility at an impressionable age. They appear very keen, smart and efficient, one cannot but be impressed by their bearing and appearance.

Arbeitsdienst.—Every German is legally bound to give six months labour to the State during his twentieth year—rich and poor alike. The only distinction allowed is that University students are permitted to do their six months service during the summer, so as to be able to take their examinations in the winter. The A.D. (Labour Service) of course provides a large pool of cheap labour for public works, which is its first object, but it also has a political and a military task. In the A.D., political education is continued, and here it is that the conscientious objector again comes under treatment for the first time since he left the national school. All must do labour service, whatever their political views. The A.D. also ensures that a conscript when he joins the armed forces shall be physically fit. The work is hard and the life healthy.

The writer visited an A.D. camp. It was at a considerable height, the month was November, and there were several inches of snow on the ground. Reveille was at 6 a.m. and was followed by twenty minutes physical training in the snow and a small breakfast. At 7.30 a.m. the men marched out to work and did not return to barracks for lunch until 2.45 p.m. They had a second and more substantial breakfast brought out to them about 10 a.m. The men were employed clearing woods and undergrowth to make arable fields, draining the land where necessary and building roads. Lunch was very plain, but unlimited in quantity, and an hour was thoughtfully allotted afterwards to sleep it off. The next item was one hour's drill, with spades to take the place

of rifles, and, incidentally, without gloves. The rest of the day was spent in playing games and listening to political and military lectures and discussions. Lights out was at 10 p.m.—a hard days work in the snow and on frozen ground. The men seemed extremely cheerful, healthy and well-cared for. Although they had fairly recently started on their six months service there were only two (out of 250) in the sick-room. There is no doubt that the A.D. turns out a healthy and physically hard and well-developed conscript.

Wehrmacht.—During his twenty-first year the German starts his twelve months service[1] in the armed forces (*Wehrmacht*). This is the period for which he has been educated since the age of ten or earlier, if he is a keen National-Socialist. He joins physically hard and fit, used to marching, probably a practised small-bore shot, in some degree trained to move quietly and inconspicuously across country and to use his eyes and ears, used to command and responsibility if he has been a H.J. officer, and lastly convinced of the great future that lies in store for Germany under the National-Socialist regime and of his duty to help—fine material from which to make a soldier. It is understandable that the military authorities prefer that pre-military training should not go beyond the general subjects outlined above. All matters of detail are best learnt with the armed forces rather than perhaps mislearnt from less practiced instructors. The qualities mentioned above, however, are obviously of vital importance to a soldier, and are such as are best taught early in life. After his colour service he may continue to belong to one of the party organizations. In this way it can be ensured that his political views do not depart from regulation, that he remains physically fit and in marching trim, and does not forget his scoutwork and rifle shooting.

Politische Organization.—The most important of these party organizations is the P.O. (Political Organization) whose job is nominally to look after—politically—the members of the N.S.D.A.P. (National-Socialist German Workers Party, to give them their official title). A word of explanation is needed here. Not all supporters of the National Socialist movement are members of the party. Before the party came to power, membership was open. On their advent to power there was a rush of new members and membership of the party was very soon closed. The idea is thoroughly to test and prove the worth of the large number of new members before enrolling any more. There are now about 3½ million members; these wear a special badge on their coat lapel in mufti, or on their tie in uniform—for of course, like all these

1 Lately increased to two years.—EDITOR.

organizations, they have their own special uniform. They drill and march, and have a military organization of some six ranks. The lowest of these—Blockleader—looks after the political views of the members of the party living in a " block " of houses, he collects their subscriptions to the party, and so on. The next higher rank looks after a small village or a part of a town, and so on to the top rank *Gauleader* (pronounced " Gow " to rhyme with *now*).

A *Gauleader* is a most important man. There are thirty-one within Germany, one for Danzig and one for all Germans abroad. Each has direct access to Hitler. Though one might imagine that they were only responsible for the political education of those members of the party living in their *Gau*, their responsibility is actually much wider. They are, in fact, responsible that everything within their *Gau* is ordered as Hitler would wish. With this end in view they work in close touch with the local government organizations, and in practice what the *Gau* leader says on any matter goes. Similar relations exist between the *Gauleader's* subordinates and the subordinate local government organizations. It seems probable that the Reich government intends to abolish the old local government boundaries of states and provinces, which are certainly antiquated and unpractical, and to substitute those of the political *Gaus*, which are much more compact areas. The *Gauleaders* are already the power behind local government in Germany to-day, and it seems probable that they will actually become the local government. The P.O. to which the *Gauleaders* belong is open only to members of the party. This is one of the ways in which the party retains control in Germany to-day. The higher ranks of the organization are, of course, whole-time salaried jobs, but the lower are not. They entail a great deal of work and the members of the organization are extremely keen. One of them spent many weary hours trying to teach the writer the orthodox political views.

Sturmabteilungen.—The largest of the party organizations is the S.A. (Brownshirts). This holds the bulk of the party's supporters and is not confined to members of the party. Training is similar to that in the P.O., but is rather more practically military than political. The S.A. has Cavalry, Pioneer, Signal and Medical troops. They even have a small pay section, which, as the men are unpaid, must be a much sought-after job. For the very highest ranks of course membership of the S.A. is a whole-time occupation, and it is usually arranged that these men also hold some paid civil job, for instance in the police, if they have no private means. A man has every opportunity in the S.A. of keeping himself militarily efficient by physical training, marching, shooting and scoutwork, as well as in possession of the latest sealed-pattern political

views. The men are not particularly smart, as their uniform does not lend itself to smartness, but they seem only less keen than the youth organization.

Schutz Staffel.—The S.S. (Black Guards) were originally formed as personal bodyguards for the party orators in the days when they had to fight for a hearing. They are used nowadays as a sort of political police at meetings and for certain jobs of a permanent nature which are probably paid. They are also, one imagines, invaluable to keep the S.A. in order when necessary. Many, if not all, are armed with revolvers, and some—in Berlin and Munich—are armed and trained as infantry, are paid, and live in barracks. The S.S. are extremely smart—they have a smart black uniform with a silver skull as a cap badge—and are a fine looking body of men.

Kraftfahr Korps.—The N.S.K.K. (Motor Corps) was formerly a branch of the S.A., like, for instance, the S.A. Cavalry units. It is now an independent organization and consists mostly of owners of cars and motor bicycles, who undertake to put themselves and their vehicles at the disposal of the party when required.

They are of great assistance to the organizers of party rallies and meetings and, of course, would be of inestimable military value for despatch riding and troop movements in war. They wear a very practical uniform consisting of a peculiarly shaped crash-helmet, black boots and breeches, and, of course, a brown shirt. Like the S.S. they appear to be a *corps d'élite.* It is not necessary that members should own a car. Often, suitable members of the H.J. are chosen and trained to take their place in the N.S.K.K. when they leave the H.J., even if they are unlikely to own a car or motor bicycle.

Reichsluftschutzbund.—The only other organization of military significance is the R.L.B. (Air Defence Corps). This is a well-organized show, with nearly seven million members. It has about a dozen ranks, of which the lowest is responsible for a house or block of flats. He is responsible that the inmates know what to do in case of air attack and that certain fire precautions are taken. The highest rank commands a group, of which there are sixteen in Germany. There are over 2,000 air defence schools throughout Germany where various ranks are instructed in defence against air attack, incendiary bombs, and especially gas. As anyone in the last few years will have noticed, an R.L.B. collecting box—usually a shell or air bomb—stands in the main square of every town.

To sum up. Under National Socialism a German is taught from the age of ten or younger that he has certain duties to State and Party

which can best be fulfilled by service in the party organizations. He is developed physically and made hard and fit. He is trained in certain matters of great military value—leadership, scoutwork and rifle shooting. He comes to the colours ready to start intensive military training; when he leaves he is kept marching fit, he is not allowed to forget certain important aspects of his military training, and his political education is kept up to date. These are the great benefits of the party organizations; not the fact that they produce an organized body of men that could be used to reinforce the army. It is sometimes forgotten that in a few years time a large proportion of the S.A., for instance, will be army reservists, who on mobilization will be called to the colours. Only a cadre of doubtful military value will remain. This probably does not apply to the N.S.K.K. (Motor Corps), which would seem to be of such great military value that it may perhaps be intended to keep it intact in case of war. It does not apply to the A.D. (Labour Service) which consists of men who have not yet done their military service.

If we would judge the value of all this political inspiration, military training and organization, we need only notice what an astonishing success training and inspiration brought to Germany in the Olympic Games. A visitor to Germany to-day cannot fail to be impressed with the sight of a great nation efficiently and keenly—nay eagerly, preparing —and he may well ask himself " for what " ?

AIRCRAFT VERSUS WARSHIPS

A SUMMING UP

By Brevet-Major H. W. Mirehouse, M.B.E., *p.s.c.*,
The Prince of Wales's Volunteers

IT may seem the height of impudence that a soldier, and an infantryman at that, should enter into a discussion on the capabilities of aircraft against warships, hitherto confined to experts from the two Services mostly concerned. Yet the controversy originating from Lieutenant-Commander Young's most interesting article in the May issue of the Journal once again shows that experts are prone to be biased, and, of course, to disagree. This and the fact that we are all interested in the problem of aerial attack have prompted this effort to review the evidence on both sides and to arrive at an impartial conclusion. That the latter will be challenged, corrected, and even chastised, I have no doubt; but the effects of the arguments of previous writers on an outsider may not be devoid of interest to comparative laymen, while it may be some indication to the rival experts as to their failure or success in making their case convincing.

Let us at the outset be quite clear as to the issue under consideration. To the insinuation that aircraft have made the seas untenable by warships, Lieutenant-Commander Young has replied with figures showing that a fleet at sea will inflict some 70 per cent. casualties in return for roughly 1.5 per cent. hits, and, therefore, clearly the game is, for aircraft, not worth the candle. He ends with the contention that we should have more ships and an increased fleet rather than spend money on a large number of bombers for naval purposes. Critics of his article do not go so far as to assert that aircraft can rule the seas, but they challenge in no uncertain manner the accuracy of his deductions. It is, therefore, proposed to divide the analysis of these conflicting views into two parts:

(*a*) What can warships do to aircraft;
(*b*) What can aircraft do to warships?

First of all, however, there is an important point which seems to

have been rather overlooked in this controversy, and that is the influence of other methods or weapons of attack on either side. This may have been a deliberate omission in order to avoid complicating the problem and to reduce the issue to a comparatively simple matter of ballistics and gunnery. But without entering into an historical argument as to whether one arm has ever won a battle or a war unsupported, surely no one will deny that in practice the best results are obtained by co-operation, whether in attack or defence? It seems reasonable to assume that a fleet of the size envisaged (on page 341) in Lieutenant-Commander Young's article will enjoy the assistance of some aircraft, and that the defensive effect of these, however small, cannot be ignored. Similarly it is inconceivable that if aircraft are used on a large scale to attack a fleet, they will not have the co-operation of submarines or surface craft in order to complicate the problems of defence.

WHAT CAN WARSHIPS DO TO AIRCRAFT?

An advertisement in the May JOURNAL shows a 1.5 in. automatic anti-aircraft weapon, with a ceiling of nearly 15,000 feet, and a rate of fire of 200 r.p.m. It is common knowledge that our capital ships to-day mount two or more multiple-barrelled weapons, presumably of similar characteristics. It is not, then, unreasonable to agree with Lieutenant-Commander Young, backed up as he is to some extent by the Gold Medal (Air) essayist, that this is a deadly weapon against low-flying aircraft, and that, under favourable conditions, casualties of the order of 50 per cent. may be inflicted up to say 5,000 feet or 2,000 yards after which the "effective beaten zone" presumably becomes dispersed. But this qualification, "under favourable circumstances," is really one of the vital factors, and one which has not been fully weighed by either party in their assessment of the casualties inflicted on the adversary.

From the point of view of the ship, I think we should start by assuming that the opposition, having at any rate local or tactical initiative, is unlikely to attack under conditions which favour the defence. The results obtained at peace-time practice must, therefore, be discounted to an extent that must continually vary. But as we laymen are ignorant of these results, it is impossible to say exactly what can be done. This being so, let us consider what cannot be done, or more correctly, some of the obvious difficulties of the defence.

The value of automatic arms such as the multiple pom-pom, and for that matter of larger weapons, is affected by many factors, of which the following seem important:—

MECHANICAL DEFECTS, i.e., overheating, breakdowns, and jambs.

INTRINSIC DEFECTS.—By these are meant such defects in design, material or utility as :—

(1) *Dead Arcs*—those on which fire from an effective weapon cannot be brought to bear at a critical time.

(2) *Limitations of accuracy in aim and firing*—the larger and more complicated a weapon, the less easily can it follow the flight of a fast moving target ; and the lower the altitude of the latter, the faster is its relative transit in azimuth at certain angles of approach, until in extreme cases it is impossible to keep on the target even with a small calibre automatic such as the A.A. Lewis gun.

The effect of this is that once a barrage is broken through, although fire control is increasingly important, it becomes increasingly difficult.

At only 120 m.p.h., aircraft which penetrate the outer zone of fire will be under effective pom-pom fire for less than one minute. How many different aircraft can one pom-pom shoot down in that time under average battle conditions ?

Can the machine-gun armament—the last line of defence, be relied on to stop birds which do get past the guns before they in their turn can damage the butts by dive bombing or with torpedoes ?

(3) *Instrumental inaccuracies*—these tend to increase with the range and height of the target.

(4) *Errors in Calculation or Correction*—the attack does not inform the defence of its height, course, speed, deflection or intention ; some method of prediction must, therefore, be employed. Whatever the system, certain assumptions have to be made, and it is obvious that these cannot always be right.

The greater the relative change in position of the attack, the less time will be available for effective correction, and in these circumstances, and particularly in action, mistakes and delays are to be expected.

THE HUMAN FACTOR.—Taking for granted that gun crews and control personnel are highly trained and less likely to be disturbed during the initial stages of an attack than are aircraft crews, yet when action has become general and ships are being attacked from all sides and from all altitudes, it seems too much to expect that the defence will remain three times as cool and calm as the attack. We must not permit ourselves to fall into the common error of underestimating our enemy, who through training, equipment, fanaticism or numbers may well spring a surprise on us.

As regards training, it is probably easier to train gun numbers and control parties than aircraft pilots and bomb operators, especially high speed or torpedo-bomber pilots. To that extent the ships should have the advantage ; but in our case this may be discounted by the fact that our potential opponents with their " Nation in Arms " start, on paper at any rate, with a numerical superiority.

Morale, on which will depend the continued effectiveness of the defence (and the attack) will be affected by the proportionate casualties and success of one side or other. Certain races (our own included) are better than others in fighting against odds ; but there comes a time when material odds are too great for mere gallantry. We have seen examples of this at sea in such actions as Coronel and the Falklands, and in the air when the Fokker slaughter of the B.E.2.Cs was only equalled by the Bristol Fighter massacre of the older enemy types. In such matters history is wont to repeat itself.

Ammunition Supply.—A fleet at sea must be at a serious disadvantage when confronted with attacks by shore-based aircraft if the enemy is able to replenish rapidly from nearby aerodromes or continually utilize fresh machines.

It is here that the disparity in speed of ships and aircraft affects the problem, for in twelve hours of daylight a fleet can cover perhaps 250 miles, and may yet remain within striking distance of one or more enemy aerodromes from which attacks might be made at frequent intervals. In such circumstances, the question of ammunition expenditure and its replenishment might be a vital one.

Weather Conditions.—Lieutenant-Commander Young seemed rather to magnify weather conditions to the disadvantage of aircraft, and not to consider fully the effect on the ship's defence. I wonder, too, whether his deductions, based on his experience in aircraft carriers are correct, say for average Mediterranean conditions and for shore-based aircraft with their greater landing facilities.

Again, admitting that aircraft are unsteady platforms, there are times when, by comparison, a small ship will be far worse. A steady wind of say 30 m.p.h. on a clear day presents few ballistic difficulties to the former, but to the latter, at speed, it must adversely affect the " 20 per cent. bursts within 100 yards of the target."

Tactics.—Obviously at any one period during an engagement there is an optimum positioning of ships to secure the maximum defensive fire. Tactics cannot always be perfect and there must be occasions when the full effect of the defensive armament will be lost, particularly when the weather is adverse to the latter.

On the other hand, frequent and irregular changes of course and speed by ships will greatly upset the accuracy of high altitude bombing, and on balance it would appear that the ships have, initially at any rate, the advantage. Unfortunately for the sailor, it is in tactics that the advantage enjoyed by the airman becomes most marked: an ability to manœuvre at a vastly greater speed in a third dimension not only affords the latter protection, but facilitates concentrated or dispersed attack from all quarters and altitudes.

In other words, space unfairly magnifies three of the fundamental factors in war—mobility, the power of concentrating, and that of effecting surprise—to the airman's advantage, while it greatly hinders the sailor in controlling and making full use of his means of defence.

Machine-Gun Fire.

The great number of machine guns of various calibres carried by ships in certain navies would seem to render precarious in the extreme the wartime habit of " ground strafing " (if such a term may be applied) by hostile aircraft of such personnel, at present unprotected from the elements, as the crews of pom-poms or A.A. machine guns and parties in control positions.

Under most conditions small-arms fire from the air is likely to be very much more inaccurate than defensive fire from ships, and as a means of offence *per se* against capital ships it is unlikely to be effective until the defence has been weakened in other ways.

Smaller and less well defended ships are of course open to attack in this way, and are at a great disadvantage if attacked in force.

Defence against High Flying Attack

Being neither a gunner nor a mathematician, I realize that I am on dangerous ground in challenging the deductions arrived at by Lieutenant-Commander Young as to the percentage of aircraft casualties which he estimates he will inflict with his main A.A. armament. His arithmetic is unassailable, but is he justified in his premises ?

I do not know how the " 20 per cent. bursts within 100 yards of the target " were observed, but venture the opinion that at present such accurate shooting at high speed (i.e., 200 m.p.h.) targets at high altitude (10,000 feet and over) is quite impossible under normal conditions.

It appears that in arriving at some of his deductions he has assumed that a formation is as vulnerable a target as the same number of aircraft all flying (in line ahead formation) on the same course and speed through one and the same " effective beaten zone " from four, or more, guns. This, surely, is not the case, for in the absence of defensive aircraft, such

close formation flying would not be adopted if there were any danger of its presenting too easy a target. Bomb dropping accuracy is not necessarily dependent on " follow my leader " tactics *en masse* or even on flying at identical heights and speeds, although it is true that, at present, formation flying is necessary for accurate " pattern " bombing.

I am also certain that the problem of controlling the simultaneous engagement by one or more ships of a number of targets, flying at varying heights and speeds and on different bearings and courses, is a most difficult one to solve. At the same time, as Lieutenant-Commander Young points out, there is a limit to the number of aircraft that can operate at one time in any given hemisphere of bomb release.

" Solver," I fear, in his zoological enthusiasm, has got mixed up between the fifth leg of a sheep and the hinder parts of an ostrich.[1] Admitted that the vulnerable area of some single-engined machines is only 10 square feet from certain angles where small-arms fire is concerned, does he seriously expect us to believe that this figure applies to a high performance bomber with a crew of two or more and a bomb load of 2,000 lbs. under shell fire ? Surely to the much greater area of engines, tanks, and crew must be added those rather delicate tail plumes which maintain these large fowl in level flight and steady direction, damage to which through near shell burst or large splinters may lead to their hiding their heads, not in the sand, but in the sea.

As to the danger radius, I agree rather with Lieutenant-Commander Young than with his critics. I fancy there is a good deal of difference between the effect from a 3 in. shell and that from one fired from a 4.7, 5 or even 6 in. gun. Incidentally, he is right in excluding " overs," for the effect from a high velocity shell is not spherical or even hemispherical ; the blast zone is affected by the velocity and the trajectory at the time of detonation. Apart from this, the effective fragmentation area is dependent on the size, and consequently the striking energy, of the splinters and will vary slightly with each particular shell.

I think " Solver " is wrong when he says (on page 535) that H.E. shells strike back with practically the same effect. Personal experience gives one the impression that at normal remaining velocities, most of the fragments from high velocity shells fly forward of the detonation centre.

Can we not compromise and as a rough basis, allow a radius of 10 yards for the smaller, and 30 yards for the larger shell, always bearing

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[1] See JOURNAL for August, 1936, p. 533 *et seq.*

in mind that when shells are bursting quickly and closely together, as in a barrage, the " unhealthy area " will be considerably increased by reason of " nose caps " and large pieces of the shoulders or bases of the shell flying about in space with sufficient energy to damage even a heavily constructed machine. This " unhealthy area " will also be considerably disturbed and any machine within or close to it may well find it impossible to obtain an accurate sight or to effect an accurate bomb release.

Now comes the question of a barrage. When " cannon fodder," such as myself, refer to this, we have recollections of a thick curtain of fire of several hundred guns with a density of possibly one gun to every 10 yards over a wide frontage and well able to keep pace with the attack. Even in mobile warfare many of us are doubtful whether effective support against organized opposition is obtained if the density is much less than one gun to 25 yards, in spite of the superimposition of other weapons. Naturally, in the case of a warship's anti-aircraft barrage fire the problem is different, but I think that this comparison permits of several valuable deductions :—

(1) A thin barrage can be pierced by determined men if in sufficient numbers.

(2) A wrongly placed barrage may have moral effect but is unlikely to affect material.

(3) An effective barrage over a wide front demands, in addition to correct placing and timing, a considerable number of rapid fire guns. It consequently is extravagant in ammunition.

(4) While it should be quite possible, theoretically, to barrage effectively one or two " cylinders of approach " per ship and to close these to an attack in line ahead formation, it is quite impossible, in theory, for one ship to barrage the whole hemisphere and, in practice, to prevent hostile aircraft from reaching their position of bomb release if they attack in sufficient numbers and from many directions simultaneously. Lieutenant-Commander Young envisages ring defence in depth, and theoretically obtains it to a considerable extent in two dimensions ; but he cannot expect to obtain it simultaneously in three, even with a fleet.

WHAT CAN AIRCRAFT DO TO WARSHIPS ?

If the reader comes to the conclusion at which I have regretfully arrived, namely, that a fleet cannot by anti-aircraft fire alone keep off massed and repeated aerial attacks, the next question is, to what extent may we expect these attacks to be effective ?

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It can of course be argued with considerable justification that it is a mistake to incur heavy casualties by pitting aircraft against warships largely for the reason that they can usually be more profitably employed elsewhere. This is so, and will be referred to later. For the time being, however, we must assume that, for his own reasons, the enemy has decided to attack from the air and is favourably placed strategically and tactically to do so.

CAPITAL SHIPS.—The tactical pivot of the main fleet and the strategical pivot of the Navy as a whole is the battle squadron, and capital ships will remain vital units in our defence organization at any rate so long as other nations are capable of using such ships against us. The ultimate function of these floating fortresses is to sink the capital ships of the enemy. They are designed, therefore, essentially as big-gun platforms able to withstand heavy gunfire and torpedo attack.

No one, I think, will challenge Lieutenant-Commander Young's conclusion (on page 345) that, at present, against an adversary at sea, gunfire is more accurate than aerial bombing, even though the latter has improved considerably in the last few years, and may be expected to continue to do so. Let us, then, assume that to sink a capital ship with heavy bombs we must reproduce the effect of a dozen direct hits from 15-in. armour-piercing shell, each weighing about a ton, containing some 80 lbs. of high explosive, and having a striking velocity of, say, 1,200 f.s.

Such a ship of course might be sunk by one lucky hit penetrating a magazine; but with modern construction this is most unlikely. Again, a dozen hits would not necessarily sink a ship, although it is hard to imagine that she could remain a fighting entity after such a hammering. Can we reproduce such an effect from the air?

Theoretically, there is no difficulty in producing an A.P.[1] aerial bomb which will have ballistic and armour piercing possibilities at least equal to those of shell of the same weight. Not having enormous breech pressures to withstand, weight can be saved in the base which can be streamlined. This advantage probably offsets the disadvantage of tail fins, assuming that these continue to be found essential. In addition, an A.P. bomb can be designed to carry a larger bursting charge than an A.P. shell of similar weight, while, when it does hit, it has the important advantage of an almost vertical angle of impact.

We poor troglodytes of trench warfare are familiar with the necessity for a "bursting layer" above our main dugout roof, and most capital ships are already armoured on a similar principle to protect them from

[1] Armour piercing.

plunging shell fire. Nevertheless, if the striking velocity is high enough and the nose of the projectile—whether shell or bomb—sufficiently strong, even the thickest armour which it is practicable to provide will not entirely prevent penetration to the ship's vitals.

As regards penetration, the formula $V^2 = 2gs$ shows that it would be necessary to drop a bomb from 22,500 feet in a vacuum in order to obtain a striking velocity of 1,200 f.s. This takes no account whatever of air resistance, the retarding influence of which is more than enough to offset any initial velocity which could be given to the bomb by the speed of the aircraft releasing it. If the angle of impact is practically vertical, a striking velocity of under 1,200 f.s. may be effective, but, taking all the above factors into consideration, it seems that the effective bomb-dropping height will be but little reduced.

Briefly, then, it may be said that :—

(*a*) The A.P. bomb can be made more effective, weight for weight, than the A.P. shell.

(*b*) The A.P. bomb must be dropped from a great height to penetrate the armoured deck of a capital ship.

(*c*) The weather factor alone may make bombing from great heights at sea a difficult matter.

(*d*) " Precision " bombing from heights of 15,000 feet and over (i.e., sufficient to give penetration) against a moving target which is also taking " avoiding action " is, at present, inaccurate and consequently " pattern " bombing is employed. From such a height a great number of bombs must be dropped to secure hits.

But armour-piercing bombs are but one of the weapons in the airman's armoury. As long ago as 1918, " light-case " high explosive bombs weighing 1,650 lbs. were in existence, and were dropped by us on enemy installations.[1] It has been stated that even in those days bombs of 3,000 lbs. were contemplated. These missiles contain roughly one-half to one-third of their total weight of high explosive, i.e., roughly one-third to one-half of a ton. The explosive effect of such a projectile might well be expected to be far more serious than that of any shell, and analogous to that of a torpedo or mine ; but it has several limitations. Firstly, there is the difficulty of constructing large light-case bombs sufficiently strong to withstand the shock of impact without breaking up before detonation occurs, and of ensuring that there is effective detonation of the whole of the charge. Again, whereas in an

[1] A bomb of this description is to be seen in the Imperial War Museum, and there is a specimen of only little less weight in the R.U.S. Museum.

underwater explosion against a ship's side such as that of a torpedo, mine, or " near miss " bomb, a tamping effect (or form of destructive leverage) is obtained from the denser fluid, the destructive capabilities of an explosion in the open air, as on a ship's deck, are much less.

We cannot, however, light-heartedly ignore the effect of deck hits by light-case bombs because these are unlikely to penetrate within the armoured vitals of a ship. When a high explosive detonates, it turns into gas at an initial velocity of three or four miles a second, and although this dies away very rapidly, the havoc caused by the sudden liberation of incandescent gas and the changes in atmospheric pressures can be enormous. The effect is of course intensified if the explosion is in any way confined.

Figures are no doubt available as to the effect of blast on superstructures, guns and their mountings, wireless aerials and installations, exposed instruments, and personnel, and as to the damage caused by *débris*. But even without this data, it seems reasonable to assume that the detonation above the armoured deck of a capital ship of a few semi-light case 2,000 lbs. bombs would put a large part of her anti-aircraft defence out of action and seriously incapacitate her in other ways. Similar results might be expected from four times the number of hits with 500 lb. bombs, for although the local effect would be less, the damage would be spread over a greater area.

SMALLER WARSHIPS.—If the foregoing argument is accepted, it follows that smaller and less protected warships are even more vulnerable in these respects to bomb attack.[1] On the other hand, cruisers and destroyers are much smaller targets, and they are highly manœuverable. It is these two factors combined which, in my opinion, rule out, at present, high altitude bombing as an effective method of attack against smaller warships, although it might be employed tactically.

DIVE BOMBING.—The method of attack which would at present appear to afford the greatest chances of success to aircraft is dive bombing: it is comparatively accurate; it seems reasonable to expect that well-trained pilots will secure at least 10 per cent. of hits if they are able to reach the position of bomb release. The great mobility of aircraft, in conjunction with cloud, haze, sun glare or smoke, must at times afford a concealed approach to the dive position if not during the dive itself. Attacks can be made from many directions simultaneously:

[1] Although merchant ships are outside the terms of reference, it is obvious that, in certain circumstances, they can be sunk almost at will. The problem of the supply of a fleet in the face of aerial attack may therefore be most difficult.

examples of this may be seen at army training when ground targets are frequently attacked by a flight or squadron approaching from three or more directions. This has considerable moral effect, in addition to complicating the problem of defensive fire.

The success of " Desperado " tactics is likely to be problematical. Apart from " blacking out " or the remote possibility of being detonated in the air, there is considerable risk of missing the ship altogether or of striking rigging or superstructure and missing the deck. Even were a direct hit obtained, it would not be easy to bring about complete detonation of the charge.

Where I chiefly join issue with Lieutenant-Commander Young is that I maintain it is not essential to penetrate a ship's armoured deck in order to cripple her defence against aircraft, and once this is out of action, she can be finished off in other ways, e.g., by " precision bombing," torpedo bombing or submarine attack. Under the actual conditions of battle, I do not think that his estimate of casualties to dive bombers would be nearly so high, or that of bomb hits so low. I suggest that these estimated casualties to aircraft should be divided by five, at least, and that the bomb hits should be multiplied by five, i.e., that a reasonable estimate of the latter will be 10 per cent.

TORPEDO BOMBING.—It will be the exception, I think, for this method of attack to be employed against the capital ships in a fleet unless or until the ring defence or the capital ships' own fire has broken down. In other words, torpedo bombing seems best suited to giving the *coup de grâce* except where conditions similar to those discussed in connection with dive bombing favour surprise or immunity.

" NEAR MISSES."—A point which has been overlooked by the writers of both the articles referred to is that a " near miss " amidships may do little harm, but one near the rudders and propellers may have serious results.

CONCLUSION

To sum up :—

(1) Modern shore-based aircraft in large quantities are a very serious menace to an unsupported fleet if the latter is within range of them, especially in narrow seas.

(2) While aircraft will, generally, be more profitably employed against other targets, against a maritime nation like our own, which could lose command of the sea in half an hour, their use against a fleet may be justified, particularly if combined with other forms of attack.

(3) Aircraft are most likely to succeed against warships if surprise can be secured and a succession of concentrated attacks maintained from as many different directions and heights as the situation permits.

(4) The initial tactics of aircraft will be to seek to destroy the warships' anti-aircraft defences, fire control, and other exposed personnel, and then give a *coup de grâce* with torpedoes.

(5) While the anti-aircraft gunfire of a fleet is a powerful deterrent against air attack, by itself it is insufficient.

Unless the Fleet Air Arm is strong enough to ensure security, warships require the co-operation of other aircraft to combat this new menace.

SERVICE PROBLEMS IN PALESTINE

From A Correspondent in Jerusalem

THE arrival in Jerusalem on 13th September, of Lieutenant-General J. G. Dill, C.B., C.M.G., D.S.O., the newly appointed military commander of the Palestine Expeditionary Force, is the outcome of three important facts : (*a*) the inability of the Civil Administration in Jerusalem to check the reign of terror brought about by Arab marauders who sought, by violence, to influence a change in British policy ; (*b*) the decision of His Majesty's Government to restore order prior to the investigation by a Royal Commission into the grievances of both sections of the population ; (*c*) the determination of the Government to assert British authority in Palestine. In pursuance of these decisions the War Office, on 4th September, recalled the troops exercising in Sussex and ordered a force of 9,000, assembled at Aldershot, to prepare at once for embarkation.

The official statement, issued on the same day, included the following :—

" As already stated, the Government has under consideration the question of reinforcing the military garrison in Palestine, and in this connection the training of the First Division has been cancelled and the Division has returned to Aldershot from the manœuvre area.

" Solely for the purpose of bringing up to establishment certain units which may be required for such reinforcements a number of reservists in section A. of the Army Reserve are being called up.

" Section A. of the Army Reserve consists of a limited number of men who undertake to come up for service if called upon without the issue of a proclamation. The individuals concerned are being notified by post and only those Reservists who receive such notices should report to their place of joining.

" The Army Council addresses an earnest appeal to all employers to endeavour to arrange that Reservists so called up may resume their posts when released from service with the colours."

All of the men who were called up were serving with the colours within the past twelve months. The section was designed for the purpose of grouping together such men and providing a procedure by which exceptional Army needs on a limited scale could be quickly met. It may be recalled that in the troubles which broke out in Shanghai in 1927, a British Defence Force was formed there, and a number of Reservists in section A. were called up, as now, to bring certain units up to establishment. The imminence of the trooping season is regarded as having been a factor in the decision to call up part of the Reserve. The period for sending drafts overseas from units at home to fill in gaps begins next week. The need for additional forces in Palestine arose at a moment when there was a necessity for the Army's providing these drafts for overseas.

Immediately following the order, the troops were brought back from Aldershot in motor-buses from the Sussex manœuvres area. By nightfall the whole of the First Division was in barracks again. This was the biggest movement of a large body of British troops in England since the World War, and the first time in peace years that an entire division had been transported in this way. At dawn seventy buses belonging to the Aldershot and District Traction Company left their garage at Aldershot for the various camps at Petworth. The vehicles first made for Warnham Court where the Second Infantry Brigade were in camp. The men were ready to embus, and in a few minutes the 2nd Battalion of the Royal Norfolk Regiment and the 2nd Battalion Wiltshire Regiment were on the road to Aldershot. As soon as the troops arrived at their quarters, the buses returned to the camp to pick up the 2nd Battalion King's Royal Rifle Corps, and the 2nd Battalion North Staffordshire Regiment—the other two units in the Brigade.

The Forces.

The eleven infantry battalions and two cavalry regiments in Palestine —increased from the original two battalions of infantry—previous to the arrival of the First Division, were as follows :—

8th King's Royal Irish Hussars (motorized).
11th Hussars (armoured cars).
2nd Bn. Lincolnshire Regiment.
1st Bn. Bedfordshire and Hertfordshire Regiment.
1st Bn. Royal Scots Fusiliers.
2nd Bn. Cheshire Regiment.
2nd Bn. South Wales Borderers.
2nd Bn. Dorsetshire Regiment.
1st Bn. Loyal (North Lancs) Regiment.

1st Bn. York and Lancaster Regiment.
1st Bn. Seaforth Highlanders.
2nd Bn. Cameron Highlanders.
1st Bn. King's Own Scottish Borderers.

(In addition to the above, there were one Light Tank Company, 6th Battalion R.T.C.; two transport units, R.A.S.C.; and two Field Companies, R.E.)

By the time this is printed, the Expeditionary Force will have arrived in Palestine. The following was the order of sailing :—

From Southampton :—

S.S. "Dorsetshire," on 12th September—2nd Royal Northumberland Fusiliers; 2nd Royal Irish Fusiliers; Royal Engineers.
S.S. "Laurentic," on 14th September—Headquarters Staff and administrative units.
S.S. "Nevasa," on 14th September—2nd East Yorkshire Regt.; 2nd North Staffordshire Regt.
S.S. "Naldera," on 17th September—Headquarters, 1st Infantry Brigade; 2nd Battalion Cameronians; Royal Army Ordnance Corps.
S.S. "Neuralia," on September 18th—2nd King's Royal Rifle Corps; 2nd Wiltshire Regt.
S.S. "Vandyck," on 20th September—2nd Scots Guards; Royal Army Pay Corps.

From Liverpool :—

S.S. "California," on 22nd September—2nd Hampshire Regt.; 2nd West Yorkshire Regt.
3rd Coldstream Guards and 2nd East Kent Regiment were due to embark later.

Brigadier L. Carr, D.S.O., O.B.E., and Brigadier P. J. Mackesy, D.S.O., M.C., lead the infantry brigades.

The Forces are not accompanied by cavalry or artillery, but there are four field companies of Royal Engineers, three companies of the Royal Army Service Corps and three companies of the Royal Corps of Signals. Transport has been supplied with special motors fitted with balloon wheels for passage of sandy wastes and general desert.

The Royal Air Force in Palestine has not been reinforced, but reinforcements would be immediately forthcoming from Egypt, Aden, or Iraq, not to mention India. Certain ships of the Mediterranean Fleet are already co-operating with the other Services.

The Terrain

The most serious problem confronting the Services is a natural one : generally speaking, Palestine is a mountainous plateau which forms an extension of the Lebanon chain and runs southwards until it loses itself in the desert or is linked up with the mountainous part of the Sinai Peninsula. More than two-thirds of the country lie on the western side of the watershed, and on that side the slopes are gradual. On the East they are precipitous and are broken by valleys of great depth. It is a country of mountain and plains, deserts, and pleasant, fertile valleys, lakes and sea-boards, barren hills " desolate to the last degree of desolation," and stretches of fruitful soil. These desolate hills, countless numbers of which are honeycombed with thousands of caves, are ideal hideouts for guerilla bands. The latter, organized in groups ranging in number from ten to a hundred—but seldom exceeding that—possess natives' knowledge of the terrain enabling them to attack, retreat quickly, and elude capture. In these caves the bands have secreted their arms and their supplies. Supported from outside sources with men and money, they harrass the forces much after the manner of the tribes which Lawrence organized against the Turks in 1917. Against such a foe the greatest skill is essential. Simple tactics, based on the circumstances and fashioned somewhat after those of the enemy, are the sole useful methods which yield results.

The Acre-Rosh Pina engagement which took place on 9th September and resulted in the loss of six British dead and twenty-three Arab casualties, is a case in point. The battle started shortly after midday when a mail lorry being driven on the road between Acre and Nahariya was fired on from both sides of the road. A detachment of York and Lancasters, together with a police patrol, went out to engage the band and found that it numbered over fifty. The band was astride the highway in a semi-circular formation, facing the direction of Acre. Aircraft from Haifa which were rushed to the scene, took up the engagement in co-operation with the Army. The fight raged along the road for seven hours, lasting until eight o'clock. The Arabs fired from behind cover, never keeping their fixed positions. The rifleman would discharge a round, reload rapidly, crawl or run zig-zag to another vantage point and then resume fire. The success of their methods is seen in the official figures published on 10th September stating that " aircraft accounted for twenty and the Army for three casualties."

Without the help of aircraft the troops would have been seriously handicapped in spite of superior equipment and greatly superior marksmen. Guerilla tactics are difficult enough ; carried on from a twisted, irregular, cave-infested terrain such as characterizes the hills of Palestine, they are doubly difficult.

Arab Tactics

In the course of five months of warfare with the British forces and civilian policemen and *ghaffirs*, the Arab bands have learned a score or more of tricks which are used to good advantage in furthering their aims. The most popular is to block a road with huge stones, take up positions on each side of the road and await the coming of the lorry. While soldiers or civilians are engaged in clearing the way, the band opens fire. This method has accounted for most of the British casualties. Very few of the Services are killed or wounded while *in action*, for, while the Arab bands know how to wage guerilla warfare, they do *not* know how to shoot ; nor do they stand up against any kind of advance. In other words, the British losses, as well as civilian non-British deaths since the disturbances started on 19th April, have been the result of attach from ambush. The Rosh Pina engagement on 9th September is another case in point. At 4.30 p.m., about three hours after the beginning of the engagement near Acre, a small car driven by a Mr. Rubin, was fired on from long range between Rosh Pina and Metulla, a short distance from Yesod Hama'ala. Mr. Rubin was accompanied by an Arab *ghaffir* who got out of the car and remained on the spot to hold off the band while the driver sped to Rosh Pina for assistance. There, four British constables rushed to the scene in a tender without waiting for the arrival of the military reinforcements, who had been notified. The constables found the road blocked some distance from the point of firing. When three of their number left the car to remove the blockade, they were attacked from three sides. Three were killed instantly. Troops, who arrived fifteen minutes later, found the fourth body some distance away from the others. The troops immediately took up positions and engaged the band. In the course of the battle there were *no* British casualties.

The Problems.

If events should make it necessary to declare martial law in Palestine, this will possibly mean a change in military tactics. Up to date the Army has acted in the capacity of a police force. The standing order has been to attack only when attacked. Subsidiary orders, well epitomized in the somewhat equivocal announcement to the forces that " All Arabs are not your enemies," have obliged them to exercise great restraint and caution. The motive of the Administration—a most laudable one, was to avoid causing unnecessary hardship and suffering among the innocent Arabs, and to avoid leaving memories of British " cruelty." Every effort was made to conciliate, to heal instead of wound afresh, and to restore order by pacific measures. If this policy has failed, it has only been because of certain isolated elements of the

Arab leadership which have persisted in following a course of violence. Requests for special consideration on the part of political prisoners, quartered at the Sarafand Camp under military discipline, were invariably answered in the affirmative. Considerate treatment for women and children, for religious personages and the aged, characterized the behaviour of the British troops. Punitive measures were taken only after guilt was proved beyond the slightest doubt, and then the defendant was, and still is, afforded every opportunity for a fair hearing. Opposing stringent demands of pacific sections in the population for firm measures, the British authorities have exercised restraint any have shown humanitarianism—often when patience was exhausted and when humanitarianism was defied and openly ridiculed.

The difficult terrain is not the only Service problem. There is the question of language. The number of Arab-speaking British is limited, and quite recently the Government published a *communiqué* announcing that English-speaking Arabs were invited to act as interpreters for the new reinforcements. There is the problem of how to avoid punishing the innocent when punishing the guilty: not a few of the Palestinian Arabs have long since dissociated themselves from the revolt, and, if they aid the insurgent bands with men, money or arms, do so under the threat of death. There is the pressing question of finding quarters, at short notice, for the new troops, and of providing them with supplies—most of which have to be imported from abroad. There is the difficulty of carrying on military operations and, at the same time, preserving normal life for the peaceful citizenry. There is, too, the question of the manner in which Arabs who are being smuggled into the country from across the Trans-Jordan, Syrian, Iraqi and Hedjazian frontiers, shall be treated: most of the newcomers are known to be adventurers, and it is they who constitute the backbone of the bands in the hills. The problem of water supply (Palestine still being a country where one of the most serious hardships of the population is to find water) complicates operations.

But with all these difficulties to contend with, Sir Thomas Inskip, Minister for the Co-ordination of Defence, appropriately summarized the situation when he said: "I have no doubt that officers and men of His Majesty's Forces will carry out their duty with the good temper and humanity which are so happily characteristic of them."

MILITARY CONTROL OF A DISTURBED AREA

By Captain E. P. A. des Graz, The Rifle Brigade.

FROM time to time the Army is called upon to reinforce the police, when civil disturbance develops into guerilla warfare. With the possible exception of the Indian Army, few officers have much experience of this kind of fighting, and our own manuals give us little advice on how to deal with guerilla tactics. There is, I believe, a seditious publication on how to conduct a guerilla war, but I have not succeeded in obtaining a copy. The following suggestions may assist those who have to deal with the problems which may arise in this sort of work.

After the usual hurried move from a peace station to some centre of rioting in a large town, and as the guerilla tactics spread over the countryside, a battalion will be sent out to take charge of a country district, with orders to split itself up into such detachments as would enable it to assist the police in enforcing law and order. Thus a company finds itself on detachment either in camp or in any suitable building, which might exist, with no local knowledge and dependent on the police, who may be scattered in still smaller detachments and have probably already had an extremely harassing time.

The first step to be taken is to detail an officer to visit the police and familiarize himself with the local situation, while the company makes arrangements for its own local protection, supplies, cooking, etc. It is very unusual to find the building, commandeered for the detachment, at all suitable for all-round defence against any serious form of attack. It is, however, considered to be a mistake to put up elaborate defences for three reasons: firstly, guerillas very seldom have the courage and organization to attack troops in their quarters, although, of course, bomb throwing and sniping may be expected at night; secondly, the detachment is not there to defend itself, but to be out and about scouring the countryside; thirdly, no detachment can be successful without information, and it is very desirable in this connection if informers can be got in and patrols got out by several exits without noise and fuss.

Information.—While these matters are being attended to, the Company Intelligence Officer is trying to find out what he can from the police. His first difficulty is that the police can tell him a lot about normal minor criminals (sheep stealers, poachers, drunks, etc.), but frequently have little idea who are the local brains, as distinct from the figureheads of unrest in the district. It is usually necessary to work through a list of each village, getting a dossier of all notables, whether loyal or otherwise. These dossiers should be subsequently verified by casual conversation with all and sundry as time and opportunity offers. This work has to be done at great length, and in great detail, as, however anxious the police and civilians may be to help, they are rarely discreet. Every question asked and every name mentioned eventually reaches the ears of the insurgents. It is, therefore, essential that the list of names should be too large to give any clear indication of who is really suspected, and that questions should be so varied as to give little indication of one's real plans when repeated to the other side. General friendliness on the part of the Intelligence Officer, coupled with very great patience, is necessary. A knowledge of bridges, defiles, and other places suitable for guerilla demolitions and ambushes is usually best obtained by first studying the map oneself and then asking the police questions, as the latter, not being trained in tactics, do not normally note this type of information. It never pays to ride roughshod over the local police, as, whatever their faults, their co-operation is always invaluable out raiding, for their ability to identify practically every genuine resident in their particular district. This is of course one of the best ways of singling out strangers, who are probably the people one wants to arrest. Although " locals " are called in to do heavy work and help in an ambush, the organizers find it easier to get deliberate outrages or murders carried out either by picked men, or by men in the next village but one, who are unhampered by fear of retribution falling on their families.

Raiding.—After settling in, the detachment will probably have a quiet period, the " locals " being exceedingly nervous, in many cases genuinely believing propaganda to the effect that all soldiers are drunken and licentious. These fears, however, disappear only too quickly, and it is usually at this stage that the insurgents attempt some minor coup to reassert their supremacy in the local mind. It is, therefore, sound tactics to forestall this by carrying out a raid or two if one can acquire sufficient information. Unless exceptionally good information has been obtained the conduct of this raid is of little importance, except as a method of training troops, as it would probably be little more than a form of intimidation and a display of force. Later on, as the intelligence service improves, raids have to become much more scientific to

ensure success. For instance, the insurgents soon learn to notice if the Colour Sergeant is unusually active in connection with food, or when company detail warns troops for parade in some particular order of dress which is not in daily use. Similarly a glimpse of troops falling in by day or of lights springing up in camp at night is a signal to the other side, and detachments learn by experience to keep rations of some sorts permanently available and the men's equipment made up ready for use. Enough men to find a raiding party are confined to barracks daily, so that no one except the officer conducting the raid need know anything until the actual moment. Then the latter tells his N.C.O. to walk round quietly, warning his party to fetch their rifles and equipment and assemble in the dining hall.

The party then sets off by lorry or on foot, as the case may be; if by lorry, the procedure is simple. Making a rapid approach to the house to be raided, troops leap out, having already been detailed off into two parties. The first party rushes to surround the house back and front to prevent anyone escaping by doors or by windows within jumping distance of the ground; also to watch for weapons or papers, which may be thrown out of the windows surreptitiously to avoid discovery by the searchers inside. The second party approach the front door and, standing against the wall on each side in case any shots are fired through the door, bang on the door with their heels to get admittance. When they get inside they politely explain their errand, collect all the inmates in one room under a sentry and search the men. Another sentry is then posted at the top or bottom of the stairs, where all doors of rooms can be seen, to prevent someone in hiding from slipping from an unsearched room to one already searched, while the searchers are busy in an intermediate room. The actual search is carried out by an intelligent soldier, while the officer helps and looks on, the soldier being armed with a revolver, as a rifle invariably gets in the way. This soldier is specially selected for his ability to remember facts and dates, so that he can give good evidence under cross-examination subsequently. The officer has to record the events in a diary.

I do not propose to enter into details of how to search a house, as it is mainly practice and common sense. The only real difficulty is when women are stated to be ill in bed, as the bed probably also contains whoever one is looking for. Official female searchers are practically never obtainable in any country. When the search has been completed, including all outhouses, it must be a standing order to make the troops turn out their pockets in the presence of the master or the mistress of the house, and to make him or her go round the house with the officer, and to sign a certificate to the effect that nothing is missing and no

damage has been done. When a raid is carried out on foot, an approach in fours up the main road in view of the house gives warning, and it is better when possible to send someone round behind before the main party comes in view. When raiding a house in a street where an approach from the front and rear simultaneously is not possible, someone in the raiding party has to be absolutely sure of the correct house, as the party responsible for the rear of the house has to approach in two halves, through two houses, one further up and one further down the same street, from the back gardens of which they can watch for anyone trying to get away from the house to be raided.

Hold Ups and Murder.—The next problem likely to worry the detachment is attempted beating up by night of friendly civilians and troops off duty. The best way to combat this is to send out an officer and an orderly in plain clothes, equipped with rubber-soled shoes, electric torches and pistols. Needless to say they both have to be competent in the use of a pistol. The procedure is just to walk about, naturally following different routes on different evenings, and to search anyone they meet. This makes people shy of going out at night, discourages gangs of roughs, and makes carrying arms risky. When a curfew is in force, this procedure is of course unnecessary, as a normal patrol takes their place. Sniping also is discouraged by these patrols, as unless the sniper keeps at excessive range he is never sure that a patrol may not happen to be in his vicinity as he lets off a round. Persistent sniping from one place is dealt with by laying the sights of a machine gun on the flashes, looking along the sights in daylight, and sending a patrol out to lie and wait for the man next night.

Active Self-Defence.—It is a great feather in the cap of the insurgents when they catch and hold up or shoot an individual officer out on his own. On the other hand, when an officer under these circumstances succeeds in shooting two or three of his assailants, respect for military authority goes up enormously. Yet few officers can be bothered to learn to be handy with a pistol, or take the trouble to study the manual on unarmed defence, in which is set out a method by which a person held up at the point of a pistol has a sporting chance of saving his life and laying out his opponent.

Ambushes.—The tactics for ambushes approach much more to ordinary soldiering. Accurate fire causing casualties to the attackers is naturally the answer, but troops do not shoot their best after being catapulted out of a vehicle, which has put its nose in a road trench. If the attackers are well posted, remaining on the site of the ambush and blazing off is of little use, and leads to casualties ; a vigorous attack is infinitely better. Where the ambushed troops are in two vehicles

properly spaced, the second party tries to outflank the ambush, but if the lorries are left unattended entirely, some of the enemy may creep up from the other side and set them on fire.

After the ambush is over the "locals" should be collected and made to repair the trench in the road. It is useful to let them watch you, always from a distance, putting a Mill's grenade with the pin out, with a stone on top of the lever, well down in the middle of the repair work, as this discourages them from reopening the trench as soon as the troops leave.

Drives.—When the detachment has arrested a few ringleaders and frightened the rest away, the district becomes quiet and the detachment commander's eye turns to some roadless tract of country, inconveniently far both from himself and from neighbouring detachments. A combined operation to sweep the whole of this district becomes the next event. Information about such a district is usually negligible, as it is too far away for any well-disposed locals living there to feel inclined to risk their lives bringing in information. If there ever has been a police post there, it has probably been withdrawn in the early stages and the personnel split up and used to reinforce more important posts. Searching every house is an unpractical proposition owing to the ease with which arms can be hidden in hedges, manure heaps or cabbage patches as soon as bodies of troops are seen converging on the district. The only practical course of action therefore is as for grouse driving, i.e., an area suitable to the number of troops available should be driven to a line of concealed posts, the sides being suitably protected by flankers. Those attempting to break through the cordon are labelled and segregated. These are usually very few, and are only people who know they are badly wanted, and that their photograph is in the possession of the authorities.

The driving line advances in line very slowly. Behind this line follow small parties to bring along prisoners. With, or in front of the first line move as many officers as can be spared. Their job is to interrogate everybody met and sort the strangers from the farmers cultivating their own fields. The strangers have of course concealed their weapons and taken on some labouring job. The best plan is to arrest every man, as in a district that had been giving a lot of trouble the fact of being arrested and taken to the end of the drive makes the farmers realize that harbouring insurgents in their district leads to trouble. Each man is asked where he lives and what he is doing. The farms are then visited and the wives asked where their husbands are working. From these questions it is possible to identify quite a large proportion of the arrested men as genuine farmers at work on their land. Those whose identifica-

tion is doubtful are kept separate from those identified, while those for whom no identification at all is forthcoming are kept separate again. At the end of the drive the farmers are released and doubtful cases re-examined. The remainder, who have failed to identify themselves as "locals," are taken away for further identification by the police from districts they claim to belong to, or for detention as wanted men. When time permits and the drive has not been on too large a scale, the troops are sent back to their starting place, walking quickly in extended order, across country, the way they have come. Quite often a wanted man or two, who has successfully hidden in a drain, is caught, having come out of hiding too soon. When these drives are conducted on a large scale the bags are so large that it is impossible to arrest everybody. Identification becomes too long and becomes impossible, so that no one is caught unless they are stupid enough to try and run away. When a detachment has been working on these lines for some time, and especially if it has the good luck to have one or two ambushes or hold ups, in which it has inflicted heavy and visible casualties on the insurgents, its district should almost revert to normal, and it is at this stage that the insurgents usually approach the Civil Government with the object of making terms.

THE NEGLECT OF SEA POWER

By E. H. Baxter

IT is one of the most amazing paradoxes in human history that island races have generally tended to neglect sea power. Practically all the great maritime States from the empires of Egypt and Carthage to the XVIth century have been countries with land frontiers. With the exception of the military monks of Rhodes and Malta, only two groups of islands—Great Britain and Japan—have become important naval Powers, and that only in comparatively modern times. Archipelagoes, such as those of Greece, Malay, and Melanesia, tend to produce piracy but not any enduring form of sea power.

Most of our histories start with the Ancient Britons. Those early settlers in Britain came by sea and had some regular trade with the Continent; yet they made no attempt to meet the Roman invasion with sea power. It may be that they knew their ships would be no match for the Roman galleys which were then the most powerful vessels in the world, and possibly the Celt prefers land fighting to sea warfare, but the fact remains that it was sea power which enabled the Romans to attack when and where they pleased, and to send reinforcements as required. The Romans understood sea power: they knew what they owed to it, and they knew that to possess it entailed sacrifices. The raids of the Baltic tribes did serious damage; but eventually they were brought to book by a naval force which had been organized under the Count of the Saxon Shore, and which either intercepted the raiders at sea and beat them there, or, if they succeeded in landing, cut off their retreat. This is the first instance of the conscious use of sea power in these islands, but the initiative must be credited to Rome. The Vikings also raided the coasts of Gaul and Spain, and even entered the Mediterranean. Here again the Romans realized that, if the enemy could be controlled in the North Sea, those southern waters and the Roman Empire would be safe; in other words, they knew that a fleet and its base should be as close to the enemy's country as possible. How many people in Britain to-day understand that fleets based on Malta and Singapore are, in effect, affording protection to these Islands?

When the Romans wished to withdraw from Britain they were able to do so in safety because they had command of the sea ; but for the next six centuries after their departure England was constantly being raided and invaded. The strangest thing about this period is the continuous refusal of the British when they were free to profit by experience : they had seen the victorious galleys of Rome, yet they made no effort to imitate them ; the Low German tribes all came here by sea, yet once here they, in turn, forgot the medium which had brought them. Each invasion of seamen became landsmen ; they neglected sea power and consequently became victims of the next invasion. With the exceptions of the fleets raised by Athelstan, Alfred and Edgar, there were no serious attempts to secure sea power : the sea was merely an aid to raids and invasions ; these might or might not be met on land, but until the enemy landed he had little fear of being brought to action.

The Norman Conquest is another historic example of an island people suffering through neglecting to make themselves sufficiently strong at sea. Harold had a fleet, but it had gone North to deal with an invasion of Yorkshire, so William was able to cross the Channel and land without any opposition. Harold's strategy against the Northmen was sound enough : his army would beat them on land, while his navy would deal with their ships and so cut off their retreat. But his misfortune lay in not having a two-Power navy which could have guarded both the Channel and the North Sea. This was an early warning that our Navy should never be measured by that of any particular foreign Power, but by the combined forces of any potential alliance against us. Sea power gave William his kingdom, and consolidated it for his son. Some of the Southern ports were held for Robert of Normandy by Bishop Odo of Bayeux, and these would have provided bases for another conquest by the Normans ; but William II's navy held the Channel. Thus the army of invasion, although it was assured of friendly ports in the enemy's country, was foiled by the same means that spoiled Napoleon's plans—British sea power.

Until the Tudor period the principles of sea power were not clearly understood. Until we lost Calais, we had the advantage of holding ports on both sides of the Channel, but neither side made such consistent use of sea power. The chief work of a fleet was to carry troops across the water : the army which fought at Tenchebrai, in 1106, crossed without seeing any signs of opposition. On the other hand, the battle of Damme, in 1213, was an example of sea power correctly used : a potential invader was attacked and destroyed before he could get anywhere near these shores. Four years later Hubert de Burgh gained a similar victory with an inferior force by good strategy and seamanship.

He also had the distinction of being one of the first of our great seamen to suffer ingratitude from the country he had fought for ; the prestige he had gained was neglected and wasted, and he fell into disgrace.

The raid at Gadzand, in 1337, was in the best traditions of the English Navy, and was similar to some of Blake's operations and to the Zeebrugge raid in the Great War. Gadzand sheltered an enemy fleet which had done much damage. It was attacked by an English force numbering about 2,500 which overcame its 5,000 defenders, and destroyed the place. Sluys in 1340 was another instance of a fleet being destroyed in its own waters. These two actions foreshadow the feats of Drake, Blake, and Nelson, all of whom successfully attacked their enemies in their own bases and anchorages. The moral effect of such defeats has always been enormous. These, however, are merely a few isolated exceptions to the general rule of the neglect of sea power in the Middle Ages. The usual custom on the outbreak of war was to commandeer ships and to use them to raid or invade the enemy's country. A success was generally followed by the dispersion of the fleet to its normal commercial occupations. There was little or no attempt to maintain a permanent sea force until 1374, when France began to build ships specially for war. With these she had considerable success : during this era nearly every port on the South Coast of England and several on the East were burnt at least once. Cross-raiding was prevalent : it was not realized that, in the absence of a strong force at sea, a successful raid would generally be followed by a counter-raid.

The Tudor dynasty, like all its predecessors since the Conquest, came to the throne by sea power. The Henrys and Elizabeth were autocratic patriots with a genius for ruling and a keen interest in overseas trade ; moreover they were the first sovereigns to realize that sea power must be founded on a strong merchant service. By patronage and example they made sea trading fashionable : royalty and nobility furnished expeditions in association with the rich merchants ; these—the ruling classes in England—supported the merchant adventurers who made England the first Sea Power in the World. Their ships and men created that maritime supremacy which found such royal appreciation in Elizabethan days. Not until the Great War did merchant seamen enjoy such regal favour again. Henry VII had laid the foundations of sea power with great wisdom. Although harrassed with pretenders and risings, and by nature avaricious and cunning in many things, he loved his tall ships. With laws and loans he nourished the merchant service. His son made it *the* weapon of England. Henry VIII mounted the largest guns then made in his ships, cutting ports in the sides for them to be fired through. Thus was evolved a type of

warship which lasted until the advent of steam and iron. In the days of galleys, sea tactics had been chiefly directed to boarding and ramming, but now the broadside battery began to influence fighting at sea : a ship which manœuvred into a position to ram, found that she would be raked by the heavy guns of her adversary.

The weapon had been forged, but for some ten years it was to be left to rust. In the reigns of Edward VI and Mary the old heresy that if there is no urgent need for a navy it can be neglected, resumed its sway ; consequently Boulogne and Calais were lost, and it was not for generations that we again acquired overseas bases. Incidentally, it is worth noting that the ship masters and nobles who came with Philip on his marriage voyage had the chance to see Henry VIII's battleships with their big guns ; yet, when the time came, the Armada had no such ships, most of its number being only armed transports. The galley had done well at Lepanto, but a generation before the Armada the Spaniards should have realized that there was a new type which would rule the seas.

Elizabeth's naval honours were really the fruit of her father's and grandfather's labours. The merchant ship, the merchant seaman, and the merchant adventurer were the foundations of England's greatness. Henry VIII had given them guns ; Elizabeth let them loose, with a strong hint that she liked jewels : the result is history. The war with Spain provides several lessons on sea power. Spain, naturally poor, required specie as we to-day need oil. For her, the capture of a treasure fleet was equivalent to the loss of a tanker convoy in a modern war. The raids of the English privateers on the gold-laden galleons was one method whereby we employed sea power to discomfort our enemy. Drake's famous raid was another lesson in the effective use of naval force : the fleet which was being built to crush us was completely destroyed in its own ports. This action made England safer in 1587 than she had been in many a year of peace. Had Drake and his type had their way. the Armada would never have sailed ; but by 1588 the chief danger to both countries was the ignorance of landsmen and politicians who confused and obstructed the seamen. Philip's orders were a source of perpetual worry and annoyance to his Admiral, and Elizabeth almost flung away her inheritance by being a party to the parsimony and timidity which gave the initiative to the enemy, and starved our fleet of munitions and food. Howard was even ordered to lay his fleet up, but kept it in commission at his own expense, thereby ensuring victory instead of courting defeat.

The Stuarts never had that conscious grasp of sea power which the Tudors possessed, although the later sovereigns had more practical sea

experience. On the other hand the last Stuart, Anne, received what a Tudor had lost, a naval base. James I was an excellent type of the eternal pacifist who is one of the most potent causes of bloodshed and strife. His theories—that peace can be made and kept with speeches, that a rich state needs no protection except its own virtue, and that the written word is as potent as powder and shot, were echoes of the days of Carthage. Their advocates are still to be found to-day. Opponents of sea power can rarely foresee the results of their theories. The first victims of James' idealism were our fisheries and merchant traders. Then pirates of every nationality discovered that our coast offered rich prizes ; from the Shetlands to the Scillies no cargo or fishing vessel and no coastal village was safe ; British slaves became common merchandise in North African markets. With English ships rotting in their harbours, the Spanish treasure galleons could once again unload gold and silver in Cadiz. Spain was thus able to prolong the Thirty Years War. James, having murdered Raleigh to please the Spaniards, forestalled the efforts of present-day idealists by seeking security through the medium of several international conferences. Corruption laid its hand on the Royal ships and shipyards ; a post at the Admiralty was a reward and a pension for a favourite who feathered his own nest while vessels decayed and seamen starved. One or two exceptional ships were built, but these were only samples of what should have been a fleet : compared with the new Spanish and Dutch fleets the " Sovereign of the Seas " and her consorts were like a platoon of the Guards faced with an army. Expeditions to Algiers, Cadiz, and La Rochelle all failed ignominiously. So low had our prestige fallen that in 1639 the Dutch pursued a Spanish fleet into the Downs and destroyed it there.

Whatever opinions may be held about the Commonwealth, there is no doubt that it restored England's sea power. Its leaders resolved to pay, feed, and clothe their seamen properly ; they encouraged the Merchant Service by the Navigation Act ; and they adopted the principle of using the Navy to protect trade—where the English trader went the English warship would also go to help him. Not the least of their wisdom was their choice of an Admiral—Blake. Inspired by his genius, the Commonwealth Navy defeated the fleets of Holland, France, Spain and Portugal, and restored our prestige in the East and West Indies and in the Mediterranean. British sea power was no longer confined to European waters ; it extended to wherever our ships could sail. In 1655, Blake reduced Tunis, one of the strongholds of the Barbary coast pirates who had been a menace to Christian shores for centuries, and read them a lesson they never forgot while he lived. His raid on Santa Cruz in 1657 was another gallant achievement. As a sea commander, he should rank with Drake and Nelson ; like them, he died

at sea. A typical example of English reluctance to learn the lessons of sea power was the capture, early in the Second Dutch War, of a valuable convoy in the North Sea owing to the absence of an adequate escort. Again, in 1666, Charles II was responsible for the same mistake as that made by Elizabeth and her Council at the time of the Armada, and in the same waters : in the face of a strong enemy, the English fleet was divided ; consequently in four days fierce fighting we suffered heavily. Yet our power of recuperation saved us : two months after our defeat, we beat the Dutch, and a few weeks afterwards destroyed a large fleet of merchant ships in harbour. In the hope of peace and in the spirit of the best modern progressive thought, Charles II laid up the Navy. The subsequent Dutch visit to the Thames was one of our worst humiliations. In the Third Dutch War Charles frankly hired the Navy to the French.

James II, in spite of his practical experience of naval service, fled the country without trying to use sea power to defend his throne. His successor brought our late enemies, the Dutch, as allies, and our principal opponents for the next century and a half were the French. Never had the ships of England been so active and seen so much service all over the world ; yet the rising power of democracy and party politics enabled the ignorance, apathy, and hostility of landsmen to become greater dangers to the state than ever before. Somehow the Merchant Service maintained the nation's trade despite enemy action, pirates, and our own Government, who seized its best ships and men.

In the War of the Spanish Succession we took Gibraltar in 1704, and Port Mahon in 1708 : the nation's leaders were beginning to realize that sea power demands bases as well as fleets. One of the outstanding features of this time was the ingratitude shown to some of the principal Admirals of the day. Torrington was broken for keeping his fleet in being. Rooke was dismissed on his return from Gibraltar. Leake was recalled after relieving Barcelona. Mathews was court-martialled for doing the work of two Admirals. Byng was shot for failing to achieve the impossible.

In the War of the Austrian Succession there was little clear understanding about objectives. Instead of concentrating on defeating the enemy, material gains, such as prizes and towns, were sought. In the West Indies, disease and quarrels between the various commanders stultified bravery and skill. Mathews' action off Toulon showed that there was a lack of discipline and training. The close-fisted policy of the state in peace had hampered proper training, and so this had to be done in war—always an expensive policy.

The invasion by the Young Pretender in 1745 is generally given an importance which is out of proportion. Like the Spanish invasion of Scotland in 1719, it was nothing more than a diversion, though a most successful one. The Highlands, were roused by the tactless, harsh, and ignorant treatment of the Government as much as by any personal magnetism of the Stuarts. Our command of the sea, if it could not prevent the lucky passage of a single vessel, at least prevented reinforcements, arms, and money being sent to the Jacobites.

The war with France which started in 1756 was preceded by scattered fighting in the Colonies. France at this period was paying great attention to her naval forces, while we, as usual, had been neglecting ours. The Government judicially murdered Admiral Byng to atone for its own sins. Nevertheless, sea power enabled us to capture Quebec, our troops being taken there while the enemy's reinforcements were blockaded in their own country; yet the names of Saunders and Cook are almost forgotten in this affair, as is the fact that artillery and munitions were taken up the Heights of Abraham by seamen. Their losses determined the French to try to invade England. But their chief difficulty was to concentrate their fleet. In 1759 the Toulon fleet got out while Boscawen was absent getting supplies; but he caught and beat them. The Brest fleet came out in the winter and at fearful risk was chased by Hawke into Quiberon Bay and there smashed. Four years later, however, we made a generous peace by which we returned most of what the Services had won, because the new King, George III, and his advisers were tired of the war.

In 1775 the American Revolt began. As usual, the Royal Navy had been neglected and, in 1778, this weakness at sea was an inducement to France to make common cause with the rebels. In this she was followed by Spain and Holland. Had we possessed a strong Navy we should not have had this combination of Powers against us and the American Colonies would have been saved.

We entered the wars following the French Revolution with a more efficient and numerous Navy than usual, and the port of Toulon was handed over by the Royalists; but we lost it with many of the ships lying there. True, it might not have been much use to us and it would have needed a strong garrison to hold it; but in our hands it would have been very embarrassing to the French. Lord Howe's fine victory in 1794 and the capture of Cape Colony were welcome. Yet in 1796 we had to abandon the Mediterranean, owing to the lack of bases there.

By the peace of 1802, most of the overseas possessions we had captured were returned to France. Many of these had previously been of great value to privateers and others preying on our trade, and such

crass folly was bound to lead to a new outbreak of war. This duly occurred the next year—fortunately before the inherent pacifism of the English had had time to do much damage to the fighting forces. This time the British hold on the sea was so complete that the early part of the war was confined to colonial expeditions and activities in coastal waters. Spain joined forces with France against us in 1804, and in 1805 Villeneuve with his combined fleet escaped and went to the West Indies. Nelson, lacking frigates to search for the enemy, was drawn to Egypt, but finding he had been misled, hurried across the Atlantic and chased Villeneuve back into Calder's hands. The latter, with an inferior fleet, fought an action in misty weather and took two prizes; he was court-martialled for not doing more. Villeneuve, instead of uniting with the French forces in the Channel, took refuge in Cadiz, from where he came out to Trafalgar. It is not always realized that less than a quarter of the Royal Navy fought in that famous battle; had Nelson lost his whole fleet in pressing home his attack, we would still have had a fleet in being. It is instructive, therefore, to compare his responsibilities with those of Jellicoe at Jutland.

After Trafalgar, Napoleon tried to combat our sea power by an economic boycott. The Continental system was designed to shut out our trade from all Europe. Our reply was to develop our trade with other Continents, and to blockade all European ports except those which were friendly to us. This use of sea power led to an international revolt against Napoleon, and a declaration of war against us from the United States. The war of 1812 came when our hands were full in Europe. In single fights powerful American frigates, whose crews included many British deserters, gained some successes. But our chief losses were in merchant shipping, which suffered heavily. At this time, as during the American Revolution, the enemy had many sympathizers in this country—a condition of affairs which must always make it more difficult for the fighting Services to secure speedy victory.

After Waterloo, Great Britain was supreme on the seas. One result of this was the phenomenal growth of the British Empire and the thriving prosperity of the Victorian era; another was the enormous prestige we enjoyed: our friendship was greatly valued, and our strength was feared by all who would have opposed us. Foreign potentates, from the Tsar of All the Russians to the captain of a pirate junk, found the White Ensign a curb they could not break.

We attained the ultimate triumph of sea power in the XIXth century. During the Boer War, several powerful nations cast covetous eyes on our Empire, and nearly all Europe was in sympathy with the Boers; yet none dared to attack us, and we could treat an angry foreign Press

and a mischief-making German Emperor with contempt. A Three-Power Navy was an unanswerable argument to those who questioned our policy or who would have liked to have deprived us of our possessions.

This short, historical review shows how, again and again, we have neglected that sea power by which we exist as a nation and which is the foundation of the Empire ; how we have repeatedly entered a war with a Navy too weak for its task ; and how this has led to very heavy losses and bitter sacrifices before we have been able to make good our deficiencies. The changed conditions in which a future conflict will be fought must make for a speedier decision, and we may not be given time to recover from years of neglect. The fact that there is now a new menace to our security does not affect the vital importance to us of sea power. When the enemy's air power has been neutralized, the age-long contest for control of sea-borne supplies and transport will be resumed—all the more so because the demand for commodities from countries overseas will be greater in a future war than it has ever been in the past.

Our neglect of sea power has invariably led to war, just as the neglect of any defence automatically breeds attack. When we have been attacked we have generally worsted our enemy in the end, but often at great loss to ourselves because we have not been prepared. Having beaten our adversary we are wont to restore him to strength again, while deliberately weakening the forces which have saved us. Then the cycle starts all over again, leading to inevitable war. Only the Victorian Three-Power Navy effectively interrupted this cycle.

WASTED TIME IN REGIMENTAL SOLDIERING

By Lieutenant G. W. Lathbury, 43rd Light Infantry

IT is no uncommon thing, when comparison is made between the Army and other professions, to hear it said that a soldier does little work. If work be defined as useful work, then, in the case of most regimental officers, this is true ; but if it be defined as a duty which encroaches on an officer's spare time, then it can safely be said that the Army entails as much work as most other professions.

No one will deny that the present-day standard of military knowledge and efficiency required of an officer is far higher than that of pre-War times. The days when common-sense and personal courage were sufficient in any except the higher commanders, have passed. War has now become a war of nations, and modern inventions have enlarged its scope to such an extent that commanders cannot expect to make the best use of the advantages afforded them without careful study and continual practice in command.

Despite the fact that an officer's spare time has been considerably reduced, only a very small proportion of the extra period spent with his Regiment is devoted to the essential side of soldiering, which is training for war. To hazard a guess, one might say that the time is divided in the following proportion :—one-third training for war, under which may be included the study and practice in command and the training of subordinates and formations ; one-third 'barrack soldiering' or interior economy ; while the remaining time is not infrequently taken up in maintaining the Army in what it tends to become, a glorified sports organization. Thus one-third of the regimental officer's time is spent in such duties as organizing the men's games, playing games with the men, teaching the men how to play games, and, worst of all, watching the men play games. Innumerable inter-company and inter-regimental competitions follow one another in never-ending array, while in the summer or Collective Training Season, these are interspersed with tattoos, horse shows, rifle meetings, and a few old favourites such as the Connaught Cup.

Also included under this heading is competition shooting. Those officers who are lucky or unlucky enough to be skilled in the use of weapons with which they are not provided in war, are condemned to spend in practice an average of at least one hour a day for several months during the summer, culminating in a week at Bisley.

No officer who has served with his regiment in the Aldershot Command, and to a less extent in other Commands, can help but be forcibly struck by the number of activities taking place, few of which have the slightest connection with training for war. In the summer, a young officer may be called upon to play cricket either for his company, regiment or garrison, apart from any special regimental club of which he may be a member. In addition he is expected to train himself and his men in athletics, shoot on the range, or, possibly, practice for some event such as a horse show or the Connaught Cup. As a result of all these activities, he tries to serve several masters—his company commander who is responsible for his training for war, and the numerous other officers who are striving to improve the standard of the regiment in the particular branch of sport for which they are responsible. This is liable to lead not only to inefficiency, but also to discontent among the officers concerned.

Are these organized games and athletics which play such a large part in the military machine really necessary ? They take up a considerable proportion of the regimental officer's time, and exercise a comparatively small number of men, for it is a well-known fact that the same soldier often represents his company or regiment in two or three forms of sport. At present it is impossible to take these games light-heartedly or to treat them as they are meant to be treated, as a recreation, because many senior officers judge a regiment on its athletic record.

The reasons usually given for a young officer being forced to spend so much of his time with the regiment in watching, taking part in, and organizing sports and games, are threefold : first, they help to keep him and his men fit ; secondly, they provide a means of getting to know the men ; finally, they foster " team spirit " and " esprit de corps."

With regard to physical fitness, as has already been shown, games exercise a comparatively small proportion of the men, whereas twenty minutes physical training properly carried out daily, would be of infinitely greater value. From the point of view of establishing contact between officers and men, the value of games has been exaggerated. Junior officers of the British Army have always shown that they possess qualities of leadership at least equal to those of officers of other nations. These qualities are, in most cases, a natural heritage, and are not a recent acquisition. Where this is not the case, they may be acquired by other-

means. An officer does not really get to know a man by seeing him for an hour or so every week on the hockey or football ground. Five minutes talk about something that interests him will go infinitely further towards establishing the bond of understanding and respect from which loyalty springs. A French officer does not play games with his men to any extent, but he maintains that he knows his men as well as we know ours, and he is probably justified in this contention.

As to the question of " team spirit " and " esprit de corps " ; there is no doubt that games and competitions help to inculcate these ideals into a man joining the Army, as he does, an individualist ; but there is no reason why the same, if not better results, could not be achieved in the course of training for war, and that a man could not be taught to work with, and take a pride in, his company in the field as easily as on the football ground.

Games, then, should be treated as a recreation, and as such encouraged. They should not be considered as an essential part of military training taking up one half of a regimental officer's time.

Competition shooting is another item under this heading which, as I have mentioned previously, may absorb so much of an officer's time. Apart from being a form of recreation, it is encouraged as a means of improving the standard of shooting throughout the Army. Certain regiments, by dint of years of practice and considerable expense, have built up a well-earned reputation as good shooting regiments. Others are still striving to reach the same high standard, but the time they can afford to devote to this form of recreation is limited by the fact that many of them have already established a reputation in some other branch of sport or athletics—a reputation which they must keep lest they pass from the eye of authority. And so the endless competition goes on.

Is this competition shooting and high standard of marksmanship really necessary ? The Battle of Mons in August, 1914, is quoted as an example of the effect of good rifle shooting in holding up an advance ; but few will deny that additional automatic weapons would have done the work with equal efficiency. Nowadays, with the advent of the armoured fighting vehicle and carriers, and the increased tendency of automatic weapons to take the place of rifles, the necessity for a high standard of individual marksmanship, except among a selected few, has disappeared. There is no longer any excuse for the expenditure of considerable time and energy and many thousands of rounds of ammunition by a team of officers, in the hope that the name of the regiment may appear in the forthcoming edition of the A.R.A. Handbook—ammunition which might be so much better employed in practicing the men in field firing.

Finally, under this heading, come the various military sideshows such as tattoos, horse shows and rifle meetings. All these serve a purpose to a limited extent, but the time and labour involved is out of all proportion to the results achieved, and although it is realized that some of these must remain, the majority could be eliminated.

The moment has now arrived when, having pulled the Regimental System to pieces, constructive suggestions are required.

The recommendations which follow are based on two suppositions: in the first place, it is presumed that no appreciable increase in the pay of an officer is possible; secondly, that the type of officer obtained is considered satisfactory. If this is not so, the matter is simplified, for, by an adequate increase in pay, spare time could be proportionately reduced, while officers drawn from a different social class would not have the same interests outside the Army, and might be prepared to devote more time to their purely military duties. Assuming these suppositions to be correct, it becomes apparent that an officer's spare time cannot be curtailed further. In fact, it is considered that he should be encouraged to go away from his regiment for longer periods; always provided that he employs this additional leave in a suitable manner.

A recent letter to *The Times* stressed the fact that modern war with its nation-wide ramifications required leaders of the highest intellectual capacity. Leaders possessing the qualities necessary for this attainment cannot be found from officers whose time is spent in the manner already outlined. It is the duty of every officer to educate himself in political and social affairs, to keep abreast of modern thought, and to broaden his mind by meeting people outside the Army, by reading and by travelling abroad. If this duty had been carried out conscientiously in the past, the friction which has often existed between the Services, between military and political leaders, and between British and Allied Generals, might have been removed.

If it be agreed that the officer's leave must not be reduced, how then is this extra time required by him to train himself in the purely military side of his profession, to be found? That the extra time is needed, there can be no doubt. The somewhat liberal estimate of one third of an officer's five-hour work day, is certainly not enough to fit him, in the words of *Training Regulations*, "to fill an appointment in war considerably higher than that which he normally holds." Many young officers have very little practice in commanding a platoon, whereas at the age of twenty-seven or twenty-eight, they should be competent to command a company and, if necessary, a battalion. In addition, they are expected to train their own men, and to work for promotion and

Staff College Examinations. At least four or five hours a day of useful soldiering or training for war is necessary if these aims are to be fulfilled.

It is suggested that this time be found in two ways: a small proportion of it by reducing the time spent in 'barrack soldiering'—a great deal of work could be taken off the officer's shoulders in this respect by affording increased responsibility to Warrant and non-commissioned officers in the matter of pay, accountancy and interior economy in general; it is also for consideration whether Courts Martial should not be the responsibility of the Judge Advocate's Department. But the proportion of time which it is possible to save from that spent in 'barrack soldiering' is small as compared with that which could be taken from the remaining one third spent in building up the British Army's new tradition of a sports organization. It is suggested that all organized sports, athletics and shooting competitions, as they stand, should be scrapped. Officers and men should be encouraged to play games as before, but only as a recreation and an indirect means of producing the "team spirit" and "camaraderie" which, it is admitted, are essential. By cutting out competitions of all kinds, a great deal of money spent in transport, coaching, and in other ways—much of which comes out of the soldier's pocket, would be saved. More men would be able to take part in sports, and games would return to being a pleasure, as they were intended, and not as a means of establishing regimental reputations. To ensure that a high standard of physical fitness is reached and maintained by all ranks, it is suggested that a daily period of physical training be made compulsory throughout the Army for all those under a certain age. This should be accompanied by periodic standard tests which might in this case be made the subject of competition. It is realized that daily physical training is carried out by some regiments during certain periods of the year, and that standard tests already exist, but the whole matter requires more careful organization and supervision than is the case at present.

Finally, it is suggested that "Training for War Tests" be instituted from Brigades downwards, on the lines of those already carried out in certain Continental armies. These should embody tests in command, field work, marching, and field firing; and should be carried out by every commander throughout his command. Tests of this nature carried out twice yearly would provide a real means of judging the relative efficiency of units and their commanders, and including, as they would, every officer and man, would surely foster a far more genuine and lasting "esprit de corps" than any organized sport.

BASE INSTALLATIONS AND LABOUR SAVING

By Major G. C. Shaw, R.A.O.C.

In the Great War, attack from the air on rearward organizations contributed considerably on many occasions to the success of a far-removed land operation. To-day, aircraft are so much more powerful in attack, greater in numbers, and enduring in range, that sustained attack can be carried to a considerably greater depth behind an army's land front. Supply, and its functions, can expect to suffer not only the main, but also the first, onslaught from the air. A base supply depot is invariably sited at some important strategic point, which is permanent, well known, and a focus for much movement and many activities; while the supply route likewise must, in the main, follow rail, road, or waterway—all topographical features, readily recognizable, and so lending themselves to air attack.

A mechanized force, however, on account of its carrying capacity, may, to a large extent, transport the substance of its line of communications on its own bottoms; and, in so doing, will in corresponding measure be less dependent on fixed and following supply routes.[1] These will not then have the permanence of the present system, and so will not present to the hostile air raider targets so attractive, or so easily found, as those we knew in the Great War. But, on the other hand, owing to its absolute and ultimate dependence on technical supplies—petrol, lubricants, spare parts, ammunition, and the like—it, more than any other type of force, will move and have its being in the activities and resources of the base. In brief, the supply route may well become less of a source of apprehension, as there will not be seen on it the same *continuous* flow of supply as in the past; on the other hand, the base itself will be more vital than ever, yet, on account of the danger of air attack, a reduction in its size and in its personnel has become imperative. This introduces the question as to whether, with the infinite resource of modern industry, its present enormous numbers are really necessary. Can they not be cut down?

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[1] The term "line of communications" is here used loosely to denote the administrative links between base and force.

Reduction of Labour in Civil Life

Let us turn for a moment to the world of civil industry and note how labour in mass has gradually been dispensed with. About the beginning of the XIXth century, labour began to flow from agriculture to industry, and by its employment and from the sum of the individual effort in the masses herded together in mine or factory an employer obtained his output. Thus, in the "'twenties" and "'thirties," millers, for example, were carrying bags of grain thousands of times up and down the mill; and men, and even women, plodded animal-like in the coal mine beneath their heavy burdens of coal. The first great revolution in industry came about through the introduction of power-driven machinery during the middle decades of the same century. The power-plant began to replace man in mass, and through its agency mass-production, higher wages, and a lower labour bill, have been made possible. Centralized steam-power, by means of planned belting and shafting systems, drove machinery of every kind in every part of a works. This brought about much economy in personnel and in toil, yet there was frequently waste in power, owing to machines being idle at some point or other. The working benefits of a system, dependent on such a centralized and correlated lay-out, were naturally confined to the factory and workshop; they did not extend to the many and miscellaneous jobs of drudgery and routine in the household or the store; the latter were too small, too varied, too scattered, to be dealt with by such imposing plants. Then, later, in response to man's unceasing quest for power, electricity stepped onto the industrial stage; and to-day its use as power spreads to almost every sphere of human activity. It is advertised, for all to see, in the ever-extending grid-pylons which stretch across the countryside. To-day, no matter where a man may have to work, power, in the guise of electricity, can follow him—particularly if he is in, or near, a building. By suitable means it can be compelled to do for him most of the operations he formerly carried out, as repetition work, by hand and muscle—jobs such as grinding, boring, drilling, scaling, cleaning, polishing, burnishing, and brushing. Man can now plug into a wall for his power, as he has formerly done for his water or light; and the machine can now go to the job, instead of the job having to be brought to the machine.

With the general utilization of power, generated by steam or electricity, came also an increasing reduction in the hands necessary to obtain the same output. To-day, a steam-raising plant presents a picture very different from that of its early predecessors. Gone are the rows of grimy stokers; gone the many labour gangs; gone the heavy manual toil and dirt. Instead, machinery does almost everything, and

a modern boiler house is served by an odd operative, here and there, studying control gauges or pressure dials. Power-machinery has not only reduced the necessity for numbers, but also the actual toil of those engaged—" The function of the machine is to liberate man from brute burdens." [1]

Looking back before the era of power-driven machinery, we see a world where heavy bodily toil was accepted as the common lot. So, in time to come, will our soldier successors look back in mild surprise to note that, as late as this present year of grace, livery stable work consumed more hours than gunnery ; the preparation of gun and vehicle more than drill ; harness-cleaning than horse-mastership ; barrack fatigues than musketry ; and the march more than the tactical exercise. A unit, to-day, in order to carry out the mere routine of its existence must employ so large a proportion of its personnel, that little is left for soldiering. By the studied introduction of labour-saving machines much, or most, of these man-hours, now lost to soldiering, could be reclaimed. But immemorial custom has the soldier in its grip : he still thinks in terms of the legion and its numbers ; and this mode of thought will long persist. We say of a man : " He's a good soldier—look how he keeps his harness." Logically, we should say : " He is a good labourer : see how he scrubs and rubs ! " Work, in itself, is no virtue ; though it may be a necessity ; its justification lies in the results obtained, and surely the ultimate aim and test of soldiering is the production of the most efficient *soldier*, not labourer. To achieve this end, however, it is the officer who must adopt the outlook of the engineer and the civil employer, and strive to introduce into the domestic routine of the unit or depot the practice and benefits of modern science. Up to the present, unfortunately, there has been little incentive for him to become acquainted with literature which deals with modern industry and its problems ; in consequence, this is to the very great majority an unexplored territory.

At the Base

The base is a microcosm of industry adapted to the business of war ; it collects, stores, preserves, repairs, heals, and replenishes—all activities common to, and identical with, those of peace-time industry. The modern labour-saving methods of the latter should, therefore, be equally possible in the former. At the base are grouped all those supply installations requisite to maintain an army in the field : depots for supplies, general stores, ammunition, and petrol ; yards for engineer and transportation services ; hospitals, and workshops. With the exception of the last, perhaps, all are greedy of man-power. The workshop has

[1] Stuart Chase : *Men and Machines.*

taken its place among war's multifarious activities late in time; its principles and practice derive from knowledge won in a machine-powered age; in it the machine replaces handicraft; and to it speed of output, planned repair, and mass-production, are the mere commonplace of efficient routine. It, alone, fully imitates modern civil practice in its economy of labour. How can such ends, desirable in themselves and essential in view of the future air menace, be attained also in other supply installations at a base? The military drudgery in the routine of depot or storehouse at a base—its "brute burdens"—falls generally into one of two categories:—

(*a*) the moving or carrying of stores, and
(*b*) their normal cleaning or renovation.

Both, in the past, have involved much muscular effort, large fatigue squads, and a consequent heavy expenditure in man-hours. For the workshop and its practice a host of powerful appliances exist; but for the storehouse, the hospital, the yard, or dump, power-driven labour-savers have been relatively non-existent. The ideas of the workshop have as yet little permeated their routine; and it is the adoption or adaptation of such ideas that is here advocated: the mechanical outlook, which instinctively seeks the appropriate appliance for the job in hand.

Let us take the first category. What can industry furnish for our military needs? Overhead, a variety of light travelling cranes permit the easy movement of heavy stores within the storehouse, while underfoot the Decauville or gravity roller track offers similar facilities. For movement within, or adjacent to, the storehouse there are also a multitude of small, petrol or electrically-driven trucks, barrows, and trolleys. To assist further in this class of movement, there are many forms of commercial "stillages," which are merely small, low, portable platforms on to which stores can be loaded at leisure for later removal by a small truck which raises the whole and carts it away. One of the earliest essentials in a base storehouse is racking for the methodical receipt, storage, and issue, of the many and varied classes of military goods. In the past, the construction of this on the spot has entailed considerable time, material, and labour, the demand for which was ever growing, although it could be ill afforded. Here again industry can help: on the market, and utilized by many of the great motor firms, there is to-day a form of light, strong, standardized, sheet-metal racking, built up on the "Meccano" principle with bolts and nuts; this can be transported in the flat, and then speedily assembled, where required. Its employment spells efficiency, besides economy in labour. Many another labour-saver in common commercial use might be quoted, the

benefits of which are ignored by the soldier ; to quote but two examples, there are ink stencilling pencils, and packing paper in rolls with a fixed knife edge, to speed up the dispatch of packages. These are minor matters, but in the gross they would greatly reduce the numbers of supply personnel.

Now for our second category. It is in this, the humbler and still less noticed branch of what we may term domestic drudgery, that the power-machine and its possible benefits have hardly been considered at all : that province, where scrubbing, rubbing, and cleaning, take up so much of a man's time ; where work, repetitive in its movements of hand and muscle, has to be done daily ; where so many man-hours are lost to the trade of soldiering. To adapt engineering practice to such humble, domestic ends may cause the hardened engineer to shudder and the traditional exponent of " spit and polish " to explode : to the first it carries a taint of heresy ; and to the second it smacks of sloth. For example, the removal at high speed and with practically no physical labour of mud and dirt from tent pegs or boots by means of electrical power may appear, at first sight, distinctly unconventional ; yet, in a fraction of the time now spent, harness metal work can be polished, vehicles may be furbished up, kitchen utensils scoured, boots brushed, and buttons brightened, rust can be scaled off, soot made to fly, grease removed, and dirt dissipated—all by machines, of which the cost is relatively trifling, and the design simplicity itself. Until recent times, the tedious work of such routine could be carried out in one of two ways only : the job had to be done by hand *in situ ;* or, in favourable circumstances and in economic quantity, it might be taken to some workshop with its speedier facilities—an alternative, however, normally so remote as to be out of the question. Thus the bayonet and its scabbard might, on occasion, be polished in a workshop, but as a rule its polishing must be done in the barrack-room ; the workshop machine may not come to the little job of routine, while the latter seldom, if ever, goes to the workshop. So it has happened that a multitude of laborious, but simple jobs, perfectly operable by power-machines, have swallowed up man-power and wasted man-hours. In base installations, in particular where the administrative organization must of necessity be in a perpetual state of flux, and maintenance operations constantly changing in magnitude, time, and site, many a job, although susceptible to machine operation, has had to be done—whatever its magnitude—*in situ* with manual labour.

To-day, there are on the market light, motor-contained machines, which can be quickly erected, or as easily conveyed, wherever wanted ; they take their power by a length of cable from any convenient " power

point " in a wall ; and they can be purchased in a variety of forms and in differing horse-power. They present an example of the increasing employment in modern industry of the self-contained machine which can be made to operate off a common source of power, but independently —and so economically—of others, which may be in the same plant. The type we have in mind are simple in principle, consisting essentially of a spindle or spindles to which swift rotary motion is imparted by a motor, and on the ends of which may be quickly fixed any one of an immense variety of mechanical " hands," such as cutting mops, bobs, grinders, brushes, and the like. To extend their capacity of operation, such machines can be used with flexible shafting, which means merely that the revolving head is fastened at the end of a thick, flexible, extension tube, which is coupled by a universal joint to the revolving spindle. Such machines permit, with a great saving in time and labour, of the rapid cleaning of harness, tools, and a miscellany of other metal articles in constant use. There are yet other light, portable appliances, embodying the same principle, whereby work may be done at any reasonable distance from the power point. In these, cable carries the current to tiny portable motors, from which the rotary motion of the head is obtained, either directly, or at the end of a few feet of attached flexible shafting. With such an appliance there appears no reason why a gun-park's vehicles might not be rapidly and efficiently cleaned and polished by a couple of men, in place of the many at present employed for such a purpose. To furnish the " mechanical hands " desired for any particular operation, or set of operations, a complete industry exists ; and the mops, bobs, wheels, brushes and grinders turned out to-day are literally industry's " hands "—and they are legion.

In the foregoing it will have been noted that the presence of convenient power points has been taken for granted. This has been done advisedly, for such points are easy to install, and such installations should, and undoubtedly will, be as normal and common in appropriate buildings in the future, as are at present water and light points ; and power-electricity costs little for the work it does. The use of such machines as have been described is to-day common workshop practice, and all that is here suggested is the adoption, or adaptation, of modern engineering methods to the humbler needs of the domestic routine in a base, to say nothing of that of depot or barrack in peace. A visit to a modern foundry will show all the rough castings being " finished " and " cleaned off " by electrical grinders and polishers ; a few men only will be seen handling the little motors, with their swiftly spinning heads ; and all about the floor will go the cables, snaking to their power-points. In one place, " scaling " will be in progress inside a big boiler ; in another, the finest of work on a delicate honeycombed model. A visit

to a mass-production jewellery factory would probably also reveal similar machines being used for polishing the insides of wedding rings. Should the barman of an up-to-date hotel have to polish a thousand glasses, a similar type of machine does it for him ; should a housewife in a modern flat wish to sweep a carpet, she plugs in power for her vacuum cleaner ; but should the soldier have to do a similar type of job, he uses muscle—and time ! And what is the capital cost of such a machine ? Perhaps that of a soldier-tradesman or labourer for two or three months. Its running costs are something in the region of a penny per hour. Introduce but one such machine into a military routine, and the psychological reaction is marked : it quickly becomes noticeable, not only how other work which may hinge on it and its process is unconsciously speeded up ; but also how further ideas and suggestions for added efficiency and more speed come forward. For man is never satisfied.

The soldier's new swift transportation is consequent on his adoption of the power-machine ; his weapons, in their utilization of the force of explosion, increasingly become power-tools ; only in his domestic needs does he lag behind in the quest for efficiency and power. Unlike the business manager, he still thinks in terms of man-power, and every extra fatigue entails its inevitable demand for more men. To the soldier, the labour bill has meant nothing, and so there has come no really urgent call for the machine and its labour-saving. In the hostile aeroplane of the future, however, will undoubtedly be found the compelling necessity for this.

A LINK IN IMPERIAL COMMUNICATIONS

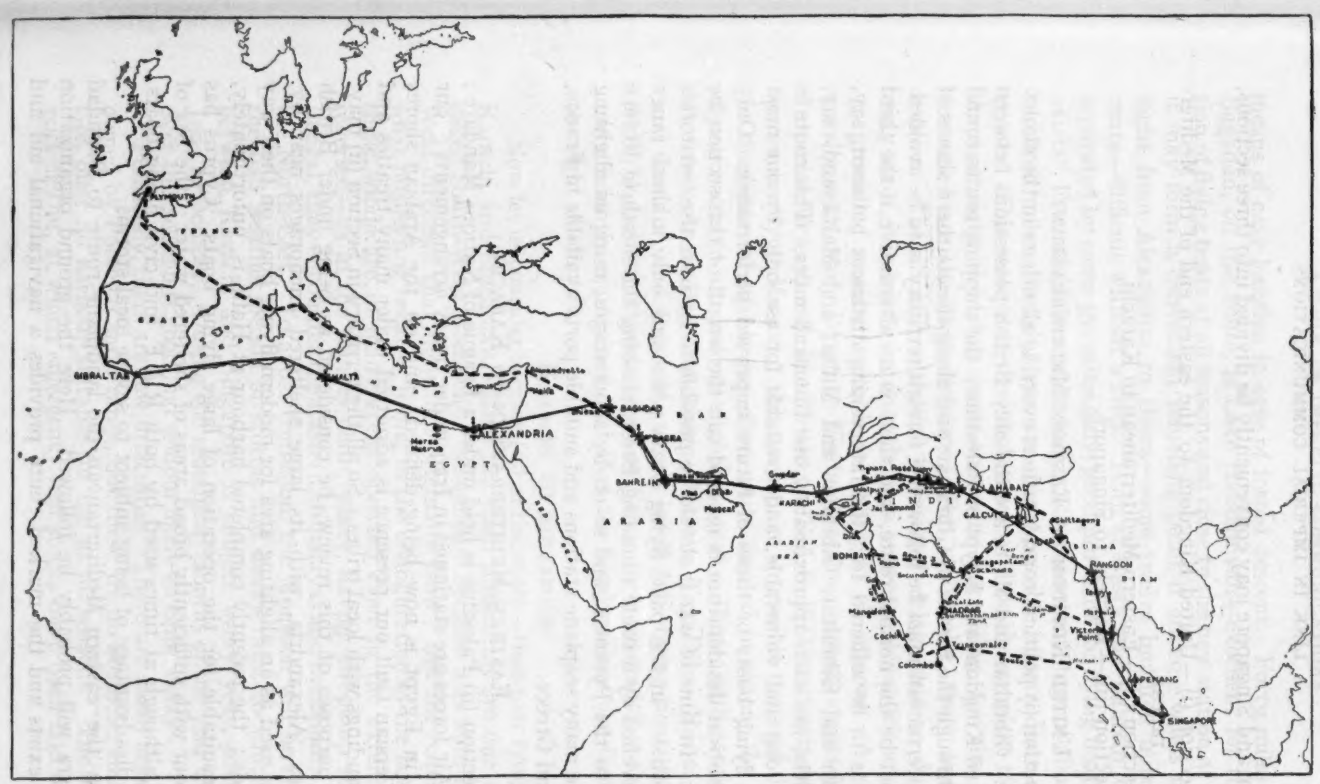
R.A.F. FLYING BOAT ROUTES TO THE FAR EAST

By Flight Lieutenant L. K. Barnes, M.B.E., R.A.F.

FLYING boats are undergoing great developments in range and speed, but some few years must pass before Service squadrons will be equipped with any of greatly improved performance. This article is intended to examine the routes suitable for use with the types of flying boat recently introduced into the Royal Air Force.

Certain premises will be made. Firstly, it will be assumed that flying boats are capable of a non-stop flight of at least one thousand miles against any normal head wind. Secondly, it will be taken for granted that the boats, being multi-engined and capable of continuing flight with one or more engines stopped, the risk of forced descent can, as a major consideration, reasonably be ignored. If, however, a forced descent does occur it is preferable that this should be on land rather than at a great distance out to sea. This may at first seem to be a controversial point, and at variance with the average seaplane pilot's dislike for flying over land ; but to be of any value a route must be available in all weathers : a forced alighting far from land in a raging sea is inevitably disastrous—a descent on land by a flying boat may result in some damage to the boat, although the majority of the crew are likely to escape unhurt. So, whereas a coastline indented with many sheltered bays must always provide the ideal route for safety, where this is geographically not possible, it is preferable for two consecutive alighting areas to be separated by land rather than a wide expanse of open sea. This argument can, of course, hold good only so long as the land to be traversed is of limited height : a high mountain range in bad weather is probably a more formidable obstacle than miles of stormy sea. As a third premise it is plainly essential that routes should traverse, and the alighting areas exist, only in British territory or territory under British influence. Finally, it is desirable that where Service needs are not prejudiced, in selecting routes weight should be given to their value if used by civil flying boats, and also to following where possible routes for land aircraft. Duplication of ground organization will thus be avoided and the greater number of aircraft using the routes will ensure higher efficiency.

The routes about to be described are shown on the accompanying sketch map. The part of the earth's surface lying between the United



R.A.F. FLYING BOAT ROUTES TO THE FAR EAST

SCALE (AVERAGE) ONE INCH = 250 MILES

ROUTE SELECTED ———————

,, DISCUSSED ----------

Kingdom and Singapore may conveniently be divided into three sections, viz :—

Section (i)—United Kingdom to the eastern end of the Mediterranean.
Section (ii)—Eastern Mediterranean to Karachi.
Section (iii)—Karachi to Singapore.

United Kingdom to Eastern Mediterranean.

In Section (i) political considerations override all others in the choice of route. Gibraltar and Malta are the only British possessions between the United Kingdom and Egypt or Palestine ; the shipping routes round Spain, through the Straits of Gibraltar, and along the southern shores of the Mediterranean must be followed if foreign territory is to be avoided. This must be the normal route, and there is no alternative if the third premise is to be adhered to ; the intervening distances between, say, Plymouth and Gibraltar, Gibraltar and Malta, and Malta and, say, Alexandria, are each approximately one thousand miles. This route is at once long and vulnerable, and available for use only by our most modern flying boats or those of future improved performance. Only if the political desideratum is ignored can the length of this section be reduced. In time of war it should be possible to fly over the territories of our allies ; in the past, flying boats possessing only a short range have travelled by a route rounding Brest, crossing the South of France parallel to the Pyrenees, and so on by short stages, using as alighting areas the many seaplane stations and suitable ports available in France, Italy, and Greece.

Eastern Mediterranean to Karachi

In Section (ii) Palestine is held under a League of Nations Mandate ; British Air forces are stationed in Iraq under treaty arrangements ; our position in Egypt is now being defined ; and on the Arabian shores of the Persian Gulf our presence is admitted under many treaties and understandings with local tribes. So all the territory in Section (ii) may, for the purposes of this review, be considered as being under British influence. Alexandria, with its large sheltered anchorages near by, has been used as an alighting area for modern flying boats on their way eastwards ; the recently completed harbour at Haifa is, unfortunately, quite unsuitable for the operation of large flying boats. Cyprus has no harbour with sufficiently broad areas of sheltered water ; the Sea of Galilee, although at times used by both R.A.F. and civil flying boats, has the disadvantage of being subject to severe local storms.

From the eastern Mediterranean the landplane route to Baghdad and Basra will probably be followed. Here the ground organization already exists and the marked route provides a navigational aid and

means of easy location in case of forced descent. Forty miles West of Baghdad, on this route, is Lake Habbaniyah—excellent for the operation of flying boats at all seasons and close to the new station at Dhiban : it may form a convenient refuelling point if adverse winds make the flight from Alexandria to Basra—some twelve hundred miles by this route—difficult without a stop. Both at Basra and Bahrein, which are separated by some 350 miles only, good provision for flying boats already exists. From the latter place to Karachi is another stage of about eleven hundred miles, though there are many possible intermediate refuelling points. This section of the whole route will be the simplest to operate. At first sight this may seem somewhat surprising, for the countries traversed are the least developed. But, politically, there are no difficulties. Climatically, although occasional delays due to dust-storms may occur, it is fair to consider the area between Alexandria and Karachi as providing weather suitable for flying at all seasons. A good W/T service with many Direction Finding Stations already exists for use by Imperial Airways and, in addition, an R.A.F. W/T station is maintained permanently at Muscat ; this may make it possible to avoid delays due to dust-storms, which are often quite limited in extent, by directing flying boats to alternative alighting areas. These, with stocks of fuel, already exist at Baghdad, Basra, Bahrein, Yas, Dibai, Ras-al-Khaimah and Gwadur, and frequent patrols by R.A.F. flying boats of No. 203 (F.B.) Squadron, hitherto based on Basra, have ensured that these stocks are efficiently maintained and that the local natives are familiar with the sight of aircraft.

Karachi to Singapore

Now let us consider Section (iii) of the route—that part lying between Karachi and Singapore. Here the main difficulties are due to the so-called South-West Monsoon—" so-called " because it is from the South-West direction that the winds originally blow ; but the name is somewhat misleading because, owing to the configuration of the land surface, these winds are in many areas diverted even to the extent of being reversed—as in the Ganges plain, where, having swept up the Bay of Bengal, they encounter the Eastern Himalayas and eventually blow from the North-East. To avoid confusion, the Monsoon will be regarded as the bad weather period of storms and heavy rains to which the area between Karachi and Singapore is subject every year, roughly from June to October. During the remaining months of the year the weather over this section is good and seldom likely to cause delays.

Politically, there are few difficulties. There are small areas in India owned by Portugal and France, but these are no obstacle, and except at Goa offer no harbour suitable for use at all seasons. The Portuguese port of Diu, at which emergency fuel stocks have been laid in the past,

has no large area of sheltered water and can only be used when fair weather allows flying boats to be operated from the open sea outside. Some two hundred miles of the coasts of the Malay Peninsula are belong to Siam. Except for these small pieces of foreign territory, the section is composed entirely of territory either British owned or ruled by native Princes feudatory to British power.

An examination of the map will show there to be, broadly speaking, four possible routes between Karachi and Singapore. These are :—

Route 1.—To follow the coast round India from Karachi down to Ceylon, up to Calcutta and then down the coasts of Burma and the Malay Peninsula.

Route 2.—To cross over Central India from Karachi to the head of the Bay of Bengal, and then as in Route 1.

Route 3.—To follow approximately the line of shortest distance—i.e., to follow the coast of India to some point such as Bombay, cross over to the East coast—say, at Cocanada, and then cross the Bay of Bengal to Victoria Point at the southern end of Burma via the Andaman Islands, and so on to Singapore.

Route 4.—To follow the West coast of India down to Ceylon, cross the Bay of Bengal to the Nicobar Islands, and then on to Singapore.

Route 1 has two great disadvantages : it is of great length—the total distance from Karachi to Singapore being some 5250 miles—and it lacks alighting areas suitable for use at all seasons. Nevertheless this route until quite recently was the only one contemplated, and it is only flying boats of increased range and immunity from forced descents that have made alternatives possible. It was the route followed by the well-known Far East Flight in December, 1927, and January, 1928 ; the part of it lying between Calcutta and Singapore was covered later at all seasons by this same Flight after it had settled down at Singapore to become No. 205 (F.B.) Squadron, and the part round India was flown in both directions with two flying boats of No. 203 (F.B.) Squadron in February, 1934. The time of year when these flights were made tell their own story—the good weather period had been chosen when operation from the open sea was possible. By this route, excluding Portuguese Goa, the only harbours suitable for use at all seasons in the part round India are Cochin and Trincomalee. The famous port of Bombay is entirely open to the monsoon, and, although good docks make its use by shipping possible at all seasons, shelter for flying boats in bad weather could only be found in some remote part of the harbour several miles from normal facilities, with no convenient communications, and where strong tidal currents add to the difficulties. In the artificial harbour at Colombo there is during the Monsoon a swell so heavy that communication between ships and the shore is sometimes impossible, and no flying

boat could operate. At Madras the harbour is too restricted to be of value.

So much for the larger ports. The small harbour at Mangalore has been used, but it is shallow and has so many shifting sandbanks that its use is too hazardous. Near Madras, Pulicat Lake and Chembarrambakkam Tank have both been used, but the former is too difficult of access by land, and the latter dries up during certain months ; Redhills Lake might be suitable at all seasons, but the authorities have forbidden its use in deference to local religious feeling, and no survey has been made. Following up the East coast of India, Cocanada and Vizagapatam have both been visited—and both compel operation from the open sea. It is possible that sheltered water might always be found in one of the many mouths of the river Godaveri, but even if this were so, the surrounding country is undeveloped and no land communications exist. Further North, at Chilka Lake, there are alleged to be large stretches of water always of at least 5 feet in depth, but this remains to be proved. Thus, as far as is known at present, there are no large enough areas of sheltered water for use at all seasons between Trincomalee and Calcutta—a distance of about thirteen hundred miles. From Calcutta down the coasts of Burma and the Malay Peninsula the coast provides so many inlets, river mouths, and islands that sheltered water can always be found, and there is little difficulty in operating this part of the route at all seasons.

Suggestions for Route 2 were put forward as a route for emergency use. Formerly, the risk of forced descents caused overland flights to be avoided, but if rapid movement was necessary, the saving in distance, and therefore in time, might justify it. Accordingly a survey for a route across India was made during the hot weather of 1934, when water levels were everywhere at their lowest. A series of lakes and rivers was found, all with sufficient water at all seasons and all with fairly easy access by land for fuel supplies. The greatest distance between any two of these possible alighting areas was 266 miles. The route proposed avoided the Sind desert, and kept over water for many miles by following the coast from Karachi to the head of the Gulf of Kutch, and thence on to the large Jai Samand Lake—one of the many lakes near Udaipur, the renowned " Venice of India." From here the next stage lay direct to Tighara Reservoir, near Gwalior city, passing directly over Kotah city, where the river Chambal always provides enough water for a forced descent to be made safely. Both Jai Samand and Tighara allow of take-off runs of many miles with ample water at all seasons. A few miles from Gwalior the river Jumna was joined and followed to Allahabad, where it joins the river Ganges. Here a long stretch of water is always available during the dry season and a

fair area of slack water is formed just below the old fort when the rivers are in flood. From Allahabad the route followed the river Ganges to its mouth at Chittagong; this was more convenient than Calcutta, where the needs of shipping made the area allotted to flying boats awkward of access by land. From Chittagong this route followed the coast southwards as in Route 1.

As described, this route seems excellent. It is shorter than Route 1—the total distance by it from Karachi to Singapore is reduced to 3480 miles, and alighting areas are always available at short distances apart. But between the Gulf of Kutch and Gwalior the country is mountainous; Jai Samand Lake is itself 1,000 feet above sea level, and surrounded by mountains. This route[1] was followed by three flying boats of No. 203 (F.B.) Squadron on their way from Basra to Australia in September, 1934; this was during the monsoon rains and storms. A temporary W/T station was fitted up at Jai Samand, but this could only give discouraging warnings of bad weather. India was crossed in weather that made it necessary to fly as low as possible, and follow valleys in visibility of only a few yards. In the words of the Commanding Officer's report: "The successful crossing was as much due to fortune as to professional skill." The return flight in the fair weather of December presented no difficulties, but by enabling the ground covered to be seen, showed how hazardous it must always be to keep close to it in bad weather. But this flight was made with obsolescent flying boats of only short range. If the map of India is studied, it will be seen that, with ranges of 1,000 miles or more, the mountainous country can be avoided by skirting it to the North and flying direct from Karachi to Allahabad without stop. This involves a very long overland flight without forced alighting areas being available, but as only low ground is traversed there should be little difficulty in any weather. This modification of the route also makes it follow more closely the route for landplanes where W/T arrangements already exist.

Several R.A.F. flying boats have now flown over the Trans-India route, but only one other during the bad weather; it travelled North of the mountains as suggested. It is of interest that Imperial Airways intend to use flying boats on their services to the Far East in the future, and that these will follow this route across India. It is suggested that they shall call at Raj Samand Lake, some forty miles to the North of Udaipur; but as this lies on the East side of the mountains near Jodhpur there will inevitably be difficulties on the outward flights in the bad weather season. It has been assumed that it is not practicable for

[1] Permission to use Gwalior (Tighara Reservoir) for the operation of flying boats has now been withdrawn. Suitable water areas exist, however, near Jhansi, some 65 miles South-East of Gwalior, so a route across India with relatively short distances between alighting areas is still available.

heavily laden flying boats to climb to great heights—the mountains before Udaipur rise in places to nearly 5,000 feet—and to fly " blind " through monsoon thunderstorms ; no pilot who has seen the storms over mountains in India would relish such a task.

Route 3 has as its only merit that it is the shortest—the total distance being about 3,160 miles. On the crossing of India from, say, Bombay to Cocanada, there are available as alighting areas the large Kharakvasla Lake, near Poona, and, at present uninspected though believedly suitable, water areas near Secunderabad. Emerging near Cocanada, the possibility of sheltered water in the delta of the river Godaveri has already been considered in Route 1. Long sea crossings totalling some 1120 miles to Victoria Point follow. But immediately after leaving the West coast of India this route crosses the Western Ghats ; mountain crossings in monsoon weather have already been discussed. There has as yet been no flight on this route.

Route 4 offers few difficulties, and is almost equal in length to Route 2—viz., about 3550 miles. In any weather the good harbours at Cochin and Trincomalee are available and, if essential, the backwaters of Bombay can be used. From Trincomalee, although only the southern part of the Bay of Bengal is crossed, this is not sufficiently far South to be out of the zone of violent storms for which that bay is famous. There are already W/T stations at the naval station at Trincomalee, but it would probably be necessary to instal a D.F. W/T station in the Nicobar Islands.

Of the four routes suggested in Section (iii), all can be used in fair weather. Routes 1 and 3 are ruled out during the bad weather. Routes 2 and 4 are available at all seasons—that is for aircraft of the long range available by premise ; and since, also by premise, a long sea crossing is to be avoided, choice inclines to Route 2. Route 2 also follows closely a route for landplanes already developed, and for which good W/T arrangements already exist. Again, Route 2 passes through Allahabad, close to Calcutta, through Rangoon, and other important towns in Burma ; it is thus of more value to civil flying boats than Route 4, with its long stage over open sea between commercially unimportant termini. Route 2 must, therefore, be selected as being by far the best at all seasons, and from all points of view.

Such, then, is the route chosen for R.A.F. flying boats between the United Kingdom and Singapore—it lies via Gibraltar along the length of the Mediterranean ; overland to the Persian Gulf and on to Karachi : deviating slightly to the North to follow the plains of Central India and so down the coasts of Burma and the Malay Peninsula. The route is confined in its early stages by political considerations, and later by vagaries of climate ; both demand flying boats of a minimum range of one thousand miles under all conditions.

APPENDIX

THE R.A.F. FLYING BOAT ROUTE TO THE FAR EAST

Main Stages and Intervening Distances.		*Alighting Areas in British Territory on or near the Route.*	*Remarks.*
Statute Miles.	*Nautical Miles.*		
	Plymouth.		The Route from the United Kingdom as far as the western boundary of Egypt is flanked by foreign territory in which there are many harbours suitable for forced alightings. If, however, flying boats of only short range are being used so that alightings in foreign territory are premeditated, a shorter route to the Eastern Mediterranean lies across the South of France and passes along the Mediterranean via Italy and Greece.
1237	1071	Nil.	
	Gibraltar.		
		Nil.	
1141	991		
	Malta.		
1049	911	Mersa Mutruh (Egypt).	
	Alexandria.		There is an R.A.F. Depot near Alexandria.
		Dead Sea.	The Route follows the track made for landplanes across the desert of Baghdad.
		Dhiban (Lake Habbaniyah).	
1158	1005	Baghdad.	Short-range flying boats are compelled to go North to Alexandretta, in French Syria, and thence to Dhiban in order to find short stages.
		River Tigris.	
	Basra.		
354	304	South coast of Persian Gulf.	From Basra to Karachi direct is a distance of 1319 miles. On this stage the prevailing wind from April to December blows from the North-West; it will probably often be possible to make the outward flight from Basra to Karachi without a stop at Bahrein. If this is attempted, and late in the flight found to be impossible, Gwadar is a convenient point on the route where fuel may be obtained.
	Bahrein.		
		Yas Island.	
		Ras al Khaiman or Dibai.	
1038	901	Gwadar.	

	Karachi.		There is an R.A.F. Depot near Karachi.
		Gwalior (Tighara Reservoir).	The distance given is for a route deviating slightly to the North to avoid mountains ; direct, the distance is 921 miles.
		River Jumna (June to November).	For short-range flying boats a route—all in British territory—exists with stages not exceeding 266 miles via the Gulf of Kutch, Udaipur (Jai Samand Lake) or Raj Samand Lake, and Gwalior (Tighara Reservoir) ; but high mountains lie on this route and between it and the main route, so that during the monsoon (June to October) this route cannot be regarded as open, or its alighting areas as available for forced landings from the main route. Permission to use Gwalior (Tighara Reservoir) has now been withdrawn, but suitable alternative water areas exist near Jhansi at Pahuj and Parichha Reservoirs.
945		820	
	Allahabad.	River Ganges (all seasons).	The distance given is for a direct route. If the river Ganges and coast of Burma are followed, the distance is increased 1251 miles.
		Calcutta.	
1082		942 Chittagong.	
		Akyab.	
	Rangoon.	Coast of Burma.	
		Coasts of Burma and Siam.	The distances given are for a route following the coasts, and during the monsoon this would generally be necessary.
857		745 Tavoy.	
		Mergui.	From Rangoon to Singapore direct the distance is 1212 miles, and so might be flown without stop, though such a route passes for a short way over Siam and in places over mountains more than 3000 feet high.
		Victoria Point.	
	Penang		
406		353 Coast of the Federated Malay States.	
	Singapore.		

Notes.—(i) Distances in the text of this article, and in this table, are given in statute miles, except in the first (main stages) column above, where corresponding distances in nautical miles are also given. The total distance of the selected route from Plymouth to Singapore is 9267 statute miles (= 8043 nautical miles).

(ii) In the second column the alighting areas underlined have been used frequently in the past, and fuel is usually available at them at very short notice.

UNIFORMS, EQUIPMENT, STANDARDS AND COLOURS OF THE BRITISH ARMY

PROGRESS OF THE SUMMARY

WITH very few exceptions, all Regiments are now co-operating in the compilation of the Summary of Uniforms, Equipment, Standards, and Colours of the British Army. Reports which are of assistance in this work have been received from sixteen Regiments, of which those from the representatives of the Life Guards, The Buffs, The Green Howards, The Royal Scots Fusiliers, The Gloucestershire Regiment, The East Surrey Regiment, The Border Regiment, The Welch Regiment, The Black Watch, and The Oxfordshire and Buckinghamshire Light Infantry are particularly useful.

A list has already been compiled of the prints and pictures of Cavalry Uniforms, etc., details of which, including their present owners, have been collected for many years by Mr. G. H. Brennan. The list includes his own collection and many others—in itself a valuable record.

The Committee will be obliged if Editors of Regimental Journals will bring this project to the notice of their readers, giving the name of their own Representative, and asking them to send him any special information they may possess. Copies of catalogues of Regimental Museums, whether printed or in typescript are very helpful; also lists of mess pictures.

Attention is invited to the fact that much valuable information on military history, uniforms, etc., is to be found in the Public Record Office, Chancery Lane, W.C. 2.

The large collection of uniforms of 1860–1914 recently presented by the War Office to the Institution has been catalogued and any article can be inspected if short notice is given to the Curator, Royal United Service Museum. The Institution's collection of Badges, Buttons, Helmet Plates, Buckles, etc., is being continually added to with a view to making it as complete as possible.[1] The greater part of this is now on view in the Banqueting Hall.

Items from the War Office Uniform Collection can be lent to Regimental Museums on permanent loan, and the Institution is always glad to assist with the gift of any duplicates.

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[1] The Curator would be grateful for the gift of the following Officers' Buckles of 1881–1902 in order to complete that section:—Coldstream Guards, Scots Guards, The Royal Scots Fusiliers, The King's Own Scottish Borderers, The Cameronians, The Royal Inniskilling Fusiliers, The East Surrey Regiment, The Highland Light Infantry, The Seaforth Highlanders, The Gordon Highlanders, The Argyll and Sutherland Highlanders.

DEVALUATION OF THE FRANC
THE THREE-POWER AGREEMENT

By Major Frederick Geidt, M.C., late R.F.A.

On the 26th September, 1936, France decided to devalue the franc in terms of gold, five years and five days after Great Britain had suspended the Gold Standard. The depreciation of sterling, wise though it was under the circumstances, was a major symptom of the greatest catastrophe that has ever occurred in the history of finance. France's action, on the other hand, has been hailed as a contribution of supreme importance to the re-establishment of world prosperity. This difference in the receptions accorded to these two similar steps well illustrates the great changes which have taken place in the last five years, but it is liable to add to that sense of confusion which so often appears to surround a subject such as international finance.

The object of the Gold Standard, as operated before the War, was to link together the currencies of different countries. A £5 bank-note was always acceptable to a Frenchman, because he knew that, even though he might not be able to sell the note to someone who wished to make purchases in Great Britain, he could always exchange the note at the Bank of England for a given amount of gold, which he could then sell for a fixed number of francs. In this way international commercial transactions were facilitated, because the seller of goods could always tell at what rate he would be able to convert the foreign currency paid to him by the buyer.

The War made it necessary for the belligerent countries to suspend the Gold Standard so as to protect their gold stocks, but a general attempt was made to return to it after the War. The dislocation which had been caused to finance and industry was, however, too widespread and too deep-seated for normal conditions to be easily restored, and any chance of success was destroyed by the strain imposed on the exchanges by the payment of War Debts and Reparations. By 1931 Great Britain was faced with the position that high production costs at home on the one hand, and the virtual bankruptcy of most of her over-

seas customers on the other, had practically ruined her export trade. The suspension of the Gold Standard and the depreciation of sterling meant that sterling costs and prices were lowered in the currencies of those foreign countries which had not themselves taken the same step, and her export trade at once began to improve. At the same time the Government reduced expenditure by the institution of drastic economies, the Budget was balanced, and confidence returned. Great Britain entered on a period of " managed currency," the main characteristic of which is that the Bank of England is no longer under a legal obligation to sell gold at a fixed price. With the removal of the gold link between sterling and other currencies, the foreign exchanges are adjusted in accordance with the supply of and demand for sterling for international transactions. The Government has been able to make credit cheap and plentiful, while restoring the balance between payments made to this country and those made by it on international account.

The British Dominions (with the exception of Canada), India, and a number of foreign countries with close commercial ties with this country followed Great Britain in devaluing their currencies, which by special arrangements were linked more or less closely to sterling instead of to gold. It was noticeable that Great Britain and most of these other countries were the first to show signs of a revival in industrial and trade activity. The United States devalued the dollar in April, 1933 (Canada keeping her currency in line with the American dollar), but this step was taken from somewhat different motives, its objects being to raise the prices of American commodities and to counteract the competitive power of sterling in world markets. This policy failed in its first object, but, in spite of the upheaval caused in the United States by the N.R.A. and President Roosevelt's other experiments, devaluation again marked the turning point from depression to recovery.

The currency policy of the United States differed from that of Great Britain in that the dollar was immediately relinked to gold, although the President was empowered further to reduce its gold content within a fixed limit. This difference was one of the utmost importance. Great Britain's policy has been to allow the international value of sterling to be adjusted in accordance with supply and demand, so that its devaluation should not impose a strain on the internal economy of other countries. The United States, by immediately relinking the dollar to gold at a new level, created a situation of extreme difficulty for those countries which remained " on gold " at the previous parities.

The European gold *bloc* consisted of France, Holland, Belgium and Switzerland. Other countries, such as Germany and Italy, remained nominally on the Gold Standard, but, owing to exchange restrictions,

could not strictly be counted as members of the *bloc*. The action of the United States forged a new and embarrassing link between the dollar and the European gold currencies. The dollar had too low a value, and francs and guilders too high a value by international standards. Sterling occupied a middle position, being overvalued in terms of dollars and undervalued in terms of francs and guilders, but Great Britain could do nothing to avoid this situation. The members of the gold *bloc* were faced with the alternatives of either devaluing their own currencies or else of adopting stringent policies of deflation, involving drastic economies and a reduction in internal prices and working costs.

The success of devaluation in other countries had been so pronounced that to many it seemed only common sense for the gold *bloc* to follow suit. The question could not, however, be settled quite so simply. France had already suffered from severe depreciation after the War, the French franc being worth only 20 per cent. of its pre-war value, so that large sections of the population had lost 80 per cent. of their savings. This experience naturally caused great opposition to further devaluation. There was, moreover, the obvious risk that, in the prevailing temper of the world, franc devaluation would start competitive currency depreciation among the leading nations, so that the last state would be far worse than the first. Depreciated and fluctuating currencies are not in themselves an end to be desired, and at the best can be justified only as a means by which conditions of stability can eventually be reached. It was hoped that the measures taken in the United States would succeed in the end in raising the prices of those commodities which enter most largely into international trade, and in this case the devaluation of francs and guilders would probably have been unnecessary for the restoration of normal conditions in the gold *bloc* countries. Orthodox opinion in those countries accordingly held that there was more to be lost than gained by devaluation, at any rate until agreement could be reached on some scheme of permanent currency stabilization.

Belgium was the first genuine member of the gold *bloc* to reverse her policy, the Belgian franc being devalued in March, 1935, with beneficial effects on that country's trade and industry. Holland was the most successful of the members in adjusting her internal economy to the high value of her currency. Switzerland also succeeded to an extent which at one time seemed impossible owing to her dependence on tourist traffic. The real key to the position, however, lay with France, where industrial activity continued to contract, political discontent began to assume menacing proportions, and such steps as were taken to stimulate industry or promote social reforms further accentuated the overvaluation of the franc. Devaluation appeared certain sooner or later. Distrust of the franc and speculative operations

caused recurrent crises with a prolonged and heavy drain of gold, until the reserves of the Bank of France were reduced below the amount which it was considered essential to retain as a war chest. At last, postponement of the inevitable was no longer possible.

The declarations made by the British and United States Treasuries in connection with the French Government's decision to devalue the franc indicate the progress which has been made towards international collaboration. The three Powers have reached an agreement to avoid competitive depreciation, to maintain exchange stability as far as may be possible, to contribute in such ways as are in their power to world prosperity, subject to their own individual necessities, and to work towards the eventual abolition of trade restrictions. At the same time other nations were invited to co-operate in this policy. Within two days Switzerland and Holland had also devalued their currencies and a number of other countries made monetary adjustments. France, Switzerland and Holland have followed the example of Great Britain and the United States in forming Exchange Equalization Funds as a means of preventing undue fluctuations in exchange rates, and the United States have made a necessary alteration in the regulations governing the sale of gold so as to facilitate co-operation between the various Equalization Funds. These Funds represent the development of a new technique in Central Banking, and their permanent retention will probably permit the adoption in due course of a modified form of the Gold Standard as a means of exchange stabilization.

France and Switzerland followed the same procedure as Belgium in immediately fixing by law definite limits within which their currencies are to be convertible into gold and *vice versa*. Holland has adopted the British plan and will control the gold value of the guilder by the operations of her Equalization Fund. These technical differences may well prove of little practical importance as the new rates have been fixed at levels which are thought to represent the actual international values of the currencies concerned, and sufficient latitude has been allowed for any adjustments likely to be required at a later date. Some difference of opinion would seem still to exist between the British and American authorities as to the proper relationship between sterling and the dollar, but there is no reason to doubt the evidence, which the Three-Power Agreement gives, of a spirit of real co-operation. If success attends these present efforts at collaboration, Germany, which has been the only country of importance to hold entirely aloof, can be expected to abandon her policy of economic self-sufficiency, and to the hopes of a revival of international trade there would then be added hopes of a permanent improvement in international political relations.

Months must elapse before it can be shown whether the Agreement achieves its declared object in " the re-establishment of a lasting equilibrium between the various economic systems," so that " the desired stability of the principal currencies can be ensured." The failure of previous attempts to reach economic agreement might seem to justify an attitude of cynicism, and the danger must be admitted of internal political factors proving in many cases a serious obstacle to the execution of a policy based on international economic considerations. Yet in spite of the many difficulties which remain to be overcome, the change that has taken place must assist towards a general expansion of industrial and trade activity. In certain markets Great Britain may find her competitive power weakened, but this should be a temporary phase only and be more than offset by advantages gained in other directions. The exchanges of the world have been released from the strain imposed by ratios which could only be maintained by artificial devices, and a stimulus has been given to the trend which had already become apparent for commodity prices to rise. An immense power of credit expansion has been provided by the higher currency value of the stocks of gold held by Central Banks, and an enlarged credit structure is now available to support a steady rise in the level of prices. The fall which can thus be expected to take place in the value of money itself, that is in the amount of goods which a given sum will buy, would cause grave inconvenience to those dependent on fixed incomes, and the greatest wisdom would be required in handling the wage disputes which would inevitably occur. Yet these disadvantages could be borne with equanimity if expectations were fulfilled in other directions. A rising price level forms the strongest stimulus to both agricultural and industrial production, and the heavy burden of indebtedness all over the world, which was so largely responsible for the depth of the depression, would be greatly lightened, as existing debts would then represent a smaller volume of production. Unemployment would be lessened, the general standard of living would rise, and with economic peace and prosperity there would be less incentive for nations to resort to war. It would, of course, be idle to suggest that the last few weeks have brought us to the threshold of the millennium, but these are the objects which a sane economic policy is designed to achieve and towards which the Three-Power Agreement has at least brought us one step nearer.

THE INTERNATIONAL SITUATION

THE SPANISH CIVIL WAR

SPAIN has been in a state of ferment for years, and in order to understand the origins of the present outbreak, it is necessary briefly to summarize the events which led up to it.

The birthday of the Republic was 14th April, 1931, the date on which King Alfonso was formally deposed. The revolution, however, did not pass off peacefully, and there were serious riots in Madrid and elsewhere throughout the country. The Monarchist party although beaten was not crushed; in August, 1932, it rose in revolt, but was suppressed by the Government. The extreme Left Wing and subversive elements continued to grow in strength, and January, 1933, witnessed serious disorders accompanied by widespread attacks on churches and religious orders. The Government, however, arrested many persons suspected of "Red" activities, and by May had the situation under control once more.

Unfortunately this did not last long, and in July, 1933, they were compelled to take vigorous action; a large number of Monarchists, Clericals, Fascists, "Reds," and Syndicalists were arrested, and for a time there was comparative calm. But this was rudely broken by the Catalan revolt of October, 1934: the Socialists, the General Union of Workers, and other bodies of the extreme Left were responsible for the organization of this rebellion, which spread rapidly throughout Spain. Asturias also became a centre of revolutionary activity and the Government declared a state of war in these provinces. Señor Companys, President of the Generalidad, proclaimed the Republic of Catalonia, but unfortunately for the success of his cause, he had neglected to take into account the attitude of the Army. General Batet, G.O.C. the troops in Catalonia, remained loyal to the Government and marched his men against the insurgents. After a brief struggle the revolt collapsed. The rebel losses, which were never accurately known, were estimated at about 1,000 killed, while the Government forces lost 220 killed, 743 wounded, and 46 missing. Señor Companys was arrested, tried, and sentenced to thirty years imprisonment. After the suppression of the revolts in Catalonia and Asturias, which were punished with great

harshness, the revolutionary activities of both Fascists and Marxists were driven temporarily underground, although bitterness and ill-will continued to grow between the various factions.

The economic situation was deplorable and large sections of the population were sunk in misery and want. These people naturally formed a fruitful recruiting ground for Communism, of which the "Red" agents were not slow to avail themselves. The Government, however, were not blind to the state of affairs and introduced an Agrarian Reform Law, which was passed by the *Cortes* on 26th July, 1935. One of the chief objects of this law was to create small landowners as a breakwater against Communism. Many cultivators would have owned their own land within a few years, while the landlords would have been indemnified by fair assessments, paid off in the form of 4 per cent. Government bonds. But this measure, which naturally required a period of tranquillity to allow it to take root, had not been passed in time: the spirit of faction and bitterness continued to grow in the country and the Left Wing elements gained so much ground that, on 16th December, 1935, President Zamora signed a decree suspending all sittings of the *Cortes*. Later he declared a General Election to be held in the second half of February. The Speaker, however, announced that, in his opinion, the action of the President in suspending the *Cortes* was unconstitutional and he left it to the new *Cortes* to assess responsibilities.

The General Election was duly held on 16th February, 1936, and resulted in a clear victory for the Left. Judged by British Parliamentary standards, however, this success was not such as to justify any revolutionary changes in the State nor did the new Government appear to contemplate any such action. Señor Azana, the new Premier, in a broadcast address, gave an assurance that his Government would work for prosperity, legality, and justice in Spain. They had no intention of persecuting anyone. Their only enemies were the enemies of the Republic. They promised peace, tranquillity and personal security. Later it will be seen how these promises were carried out in practice.

One of the first actions of the new Government was to liquidate the Catalan revolt by releasing Señor Luis Companys from arrest. The Catalan Parliament at once re-elected him as its President. After a heated debate in the *Cortes*, a Socialist majority condemned President Zamora for having acted in an unconstitutional manner. This motion implied the immediate dismissal of the President from office, and the Speaker assumed the Presidency, pending a fresh election. In this Señor Azana, the Premier, was elected President by a large majority, and Don Quiroga was elected Prime Minister and Secretary for War, in place of Señor Azana. The Government then settled down to the business of running the country but seemed to lack grip and to be

inclined to abdicate its functions to the extreme Left and subversive elements in the State.

The situation rapidly deteriorated, and on 17th June, Señor Gil Robles, the Clerical Leader, read out to the *Cortes* a series of figures dealing with the disorders in the country since the General Election of 16th February. His list recorded : dead, 269 ; injured, 1,287 ; churches completely destroyed, 160 ; churches partly damaged, 251 ; political club-houses wrecked, 69 ; general strikes, 113 ; partial strikes, 228 ; newspaper offices totally destroyed, 10 ; newspaper offices damaged, 33 ; armed robberies, 138. The Prime Minister endeavoured to dispute these figures and averred that there was much exaggeration. The trouble, he claimed, was not wholly due to the workers, but in Madrid some employers had refused to pay the new rates of wages dictated by the Minister of Labour and had closed their workshops. In any event, this explanation could not justify the long list of crimes read out by the Clerical Leader and it was obvious that a crisis could not be long delayed. If the parties of the Right were not to be butchered piece-meal, they would have to act resolutely and without loss of time.

So far, little mention has been made of the attitude of the Army except to point out that it had acted loyally in support of the Republican Government against the Catalan and Asturian rebels in 1934. But the military chiefs had been watching the situation carefully and had not failed to observe the paralysis of the Government and the growth of the subversive or " Red " elements. Armies in general tend to be conservative and patriotic bodies anxious to preserve the prestige and unity of their country, and the Spanish Army is no exception. The rapid deterioration of Spain under the Republic had alarmed the bulk of the officers and many of the more intelligent and patriotic men in the ranks. If Spain was to be preserved, the Army alone seemed to be in a position to do it. The Moroccan garrisons under the leadership of General Franco were the first to raise the standard of revolt. The total of these forces amounted to about 50,000, and included the so-called Spanish Foreign Legion or *Tercio*—actually 90 per cent. Spanish—and the Moorish regular troops (*Regulares*). These units, being practically always on active service, were among the best trained and disciplined in the Army.

OUTBREAK OF CIVIL WAR

On 18th July, Morocco passed peacefully under the control of General Franco, and next day fighting broke out throughout Spain. As one would expect in a civil war, the situation was at first very confused, but by the evening, it was clear that the Government were in control of Santander, Bilbao, San Sebastian, Barcelona, Tarragona, Valencia,

Alicante, Mercia, Cartagena, Malaga and Badajos, while the rebels held Cadiz, Seville, Cordoba, Salamanca, Valladolid, Burgos, Pamplona, Huesca, and Saragossa. The fighting was by no means universal throughout Spain and important sections of the population—especially in the rural districts—continued to lead their normal lives. General Mola, the rebel commander of the Northern Group established his headquarters at Burgos and took possession of the arms, ammunition and equipment, which had been stored in the military arsenal at Saragossa.

With a view to stamping out the rebellion, the Government forces assumed the offensive in four divergent directions—against Saragossa, against Cordoba, against Seville, and on the Guadarrama front. But lacking sufficient weight in any one attack, all four offensives were soon checked. Meanwhile an orgy of murder was being staged in Madrid, and Señor Gil Robles—the Clerical leader—was lucky to reach Lisbon in safety. Propaganda has been a prominent feature in this war and at this time, in particular, the Government transmitters were active in announcing victories on all fronts, while the rebels at Seville did their best with the more limited facilities for broadcasting, which were at their disposal. At the end of July, after two weeks fighting, General Cabarrellas, President of the *Junta Defensa Nacional*, at Burgos, made the first announcement of the new insurgent authority in Spain.

The financial side of the operations was now beginning to make itself felt and the Government voted special credits of £1,000,000 for the prosecution of the war. The rebel leaders had not the same financial resources, and it is still a mystery how they have been able to pay their way ; it can only be assumed that they have been assisted from outside sources.

From the early days of hostilities, there have been rumours that certain foreign Powers were assisting one side or the other with aircraft and munitions. On 30th July, three Italian war-planes with civilian (ex-military) pilots crashed in French Morocco. These were " lame ducks " from a force, estimated at two squadrons, which landed in Spanish Morocco. There was, of course, no arms embargo or non-intervention pact in force at this time, but the incident was in itself likely to cause international complications.

At the beginning of August, the influence of the extreme Left in the " elected " Government became yet more pronounced, while Señor Companys, President of Catalonia, formed a new Government, including ten members representing the Communists, Trotskyists, and Anarcho-Syndicalists, and Soviets were established at Cartagena, Malaga, and Almeria. Meanwhile, the French Government approached Britain, Germany, Italy and Portugal with a view to establishing a Five-Power

Pact for non-intervention and for an arms embargo for Spain. This move, which aimed at isolating the conflagration, was immediately supported by Britain and also found favour in Soviet Russia, but met with hesitations and evasions on the part of Italy, Germany, and Portugal. Later, however, these Powers agreed to come into line and the imminent danger of a struggle between Fascist and non-Fascist Governments was averted.

By 5th August, a large proportion of the rebel forces had crossed from Morocco, and General Franco felt himself strong enough to undertake an offensive movement. With true strategic insight, he decided to make his objective the freeing of the lateral railway, Burgos—Salamanca—Caceres—Merida (near Badajoz)—Seville. If he could secure Badajoz and Merida, he would be able to gain touch with the insurgent forces under General Mola in the North and establish unity of command throughout the rebel forces. The attack went through without a hitch; on 9th August, after hard fighting, Badajoz and Merida fell, and the control of the lateral railway was in his hands. The rebels were now established in a wide circle facing Madrid, with their right on Seville and their left on Burgos. Behind them was a friendly Portugal, and through that country and Galicia, they had access to the Atlantic seaboard. It was a striking success and will be likely to prove the turning point in the Civil War. The rebel forces in Badajoz took a terrible revenge for the " Red " excesses in Madrid and Barcelona and many hundreds are reported to have been killed.

On 3rd September, Madrid sent a vigorous protest to Paris to the effect that Italian aircraft—estimated at about twenty-four and destined for the rebels—had reached Vigo Bay. The truth of this is not acccurately known. There can be little doubt but that the rebels have acquired Italian and German aircraft and that they have been most useful; but they may have been delivered before the acceptance of the Five-Power Pact. Two air raids against Madrid on 29th August, caused much damage and helped to lower the Government moral.

A new Cabinet was formed on 4th September, with Señor Largo Caballero, as President and War Minister. Señor Caballero is a Socialist, and was the former General Secretary of the Spanish Trade Unions and ex-Minister of Labour. His Cabinet contained 6 Socialists, 2 Communists, 1 Basque Nationalist, 1 Left Republican, 1 Republican, 1 Catalan Left Wing, and 1 Left Centre Party. This change of rulers had little influence on the tide of battle, and on 14th September, the rebel forces entered San Sebastian.

The Argentine and Uruguayan Ambassadors whose countries are

particularly proud of their Spanish ancestry, endeavoured to produce a plan for " humanizing " the Civil War. This was presented to headquarters at Madrid and Burgos respectively. It provided *inter alia* for an exchange of civilian prisoners and might have prevented a great deal of suffering ; but passions were too high and too much blood had been spilt on both sides to enable it to make any headway.

After four weeks fighting some two-thirds of the country were occupied by the rebel forces. The Government, however, still held the Provinces of Asturias, New Castile, Catalonia, Valencia, Murcia, and the northern part of Andalusia and Aragon. The vital railway from Madrid to Valencia and Alicante via Albacete was still intact, and this enabled the capital to secure supplies from the Mediterranean provinces and from overseas.

Generals Franco, Mola, de Lano, and others held a conference on 24th September at Salamanca, at which the various aspects of the war were brought under review. In Morocco, all was quiet ; the civil administration was progressing normally ; the Arabs showed no signs of restlessness and all sections of the population showed confidence in the rebel leadership. The dislike of Communism was strong, particularly in the *Tercio* or Spanish Legion. The co-ordination of the insurgent armies was in marked contrast to the lack of unity of the Government forces. The Marxist Militias of the various loyal Provinces, although fighting bravely enough, lacked cohesion and seemed unwilling or unable to act together. The Catalans attacked in one direction while the Asturian forces operated in another. The central Government continued to show the weakness and lack of grip which brought about the revolution and the subversive elements did exactly what they pleased.

THE FIGHT FOR MADRID

The Government at Madrid, alarmed at the steadily mounting tale of rebel successes, endeavoured to place the blame on Germany and Italy, who they said had, in spite of the non-intervention pact, supplied the rebels with aircraft and munitions. Madrid sent a strong protest to Paris and stated that the non-intervention pact had, in effect, operated against the regularly elected Government of Spain. The rebel net was meanwhile tightening round Madrid and their advanced forces entered Illescas, only thirty-five miles South West of the Capital. Further air raids increased alarm in Madrid, and fears were aroused abroad that there might be a massacre of prisoners as a reprisal.

The Soviet Union lodged a strong protest to the Non-Intervention

Committee, sitting in London, alleging breaches of the convention on the part of Germany, Italy and Portugal, threatening to withdraw from the Non-Intervention Pact and regain full liberty of action. Soviet vessels, meanwhile, loaded with clothing and grain had sailed for Barcelona and Valencia.

On 8th October, General Franco's troops captured Navalperal, cleared the eastern exits of the Avila Pass, and secured the railway station at Siguenza, thus cutting off Madrid from Valencia, via Calatayud. The weather broke on 13th October and General " Mud " took temporary control of the fighting fronts. Tempests of rain and sleet burst upon the troops who suffered severely from lack of supplies and woollen clothing, and this held up the offensive.

The food problem in Madrid now assumed serious proportions: 100,000 Marxist Militia and a vast horde of civilians had to be fed; only one railway, via Aranjuez and Albacete, was working towards the coast; both food and water were short and food queues for meat and sugar had to be organized; eggs had not been on sale for over a month.

By 18th October, the ground had dried sufficiently for the Right Wing forces to resume their attacks and they delivered a smashing blow at Bargas, South West of Madrid, where the Government troops were forced to give ground. The rebel troops, at this time, showed marked superiority in leadership, discipline and flexibility of manœuvre while the Government troops, fit only to hold a defensive line, collapsed directly their flanks were turned. The beseiging air forces, moreover, strongly superior to the Government aircraft, were able to weigh the scales against the defenders.

Señor Largo Caballero, President and War Minister, showed fierce energy in his direction of the Government plans, but he was handicapped by the lack of discipline and cohesion of his " Red " militias. He made a supreme effort to raise the moral of the defenders, tried to introduce an iron discipline and kept the printing presses working overtime with appeals and proclamations. " On the issue of the battle," he declared, " hangs the fate of the country."

General Franco's forces, estimated at about 150,000 (including the spearhead of 15,000 Spanish Legionaries and Moorish *Regulares*) were now massing on a wide arc from North of Siguenza—along the Guadarramas-Avila-Toledo, with a view to the final attack on the Capital. The weakest joint in the Government armour was obviously the road and railway junction about Aranjuez leading via Albacete to Alicante and Valencia. At this point, therefore, the pick of the Government and the insurgent forces were bound to meet face to face.

On 18th October, it was announced that several thousand women, suspected of being in sympathy with the insurgents, had been arrested in Madrid. The Government, it appears, had taken note of General Franco's broadcast, in which he had referred to the assistance he expected to receive from his " fifth column " organized in the enemy's rear and had taken prompt steps to frustrate it.

By the capture of Navalcarnero, on 21st October, the rebels took an important step forward towards Madrid. Their forces were now drawn up on the line Siguenza–Guadarramas—(exclusive of Escorial)—Navalcarnero–Illescas, the nearest pickets being within twenty-five miles of the capital. Marxist counter-attacks, unskilfully delivered, failed to drive back the insurgent advanced elements, except round Escorial, where the Government forces fully held their ground.

The Soviet Union made a further protest to the Non-Intervention Committee, alleging breaches of the Pact, in particular by Portugal ; but these charges were strenuously denied and the British Government, it appeared, were in possession of evidence tending to show that Russia herself was not blameless.

On 25th October, the rebels obtained a decisive advantage in the Aranjuez sector, where their advance brought that town under the fire of their artillery and their encircling patrols were enabled to cut the railway and sever communications with the Mediterranean ports. Madrid now depended for supplies on only one metalled road running via Tarancon to Valencia.

THE SIEGE OF THE ALCAZAR

At the outbreak of the revolution, the Alcazar of Toledo—the ancient Moorish fortress, which formed the Sandhurst of Spain—was held for Franco by the Permanent Staff, the Gentlemen Cadets, and the Civil Guard, while the city remained in Government control. The Marxist Militia to the number of several thousands, invested the stronghold and the long siege began.

The defenders numbered about 1,500 persons, including some 400 women and children. They were short of food but were able to augment their supplies by sacks of grain which they captured in a sortie. This produced a kind of dry black bread of low nutritive value. Water was at first abundant from wells in the fortress, but later these ran dry owing to the prolonged drought and the garrison was reduced to a ration of only a pint and a half per head each day. Ammunition supplies were ample, and the machine guns in charge of the staff for instructional purposes were invaluable to the defence. The perimeter,

however, was too extended for the scanty numbers available to man it, and sentries had to serve seven-hour stretches without relief.

The Government forces, equipped with artillery, carried out a ruthless bombardment of the Alcazar by day and by night and launched several infantry assaults, all of which were beaten off by the accurate small-arm and machine-gun fire of the defence. The aid of a detachment of Asturian miners was next invoked, and mine galleries were driven underground beneath the fortress. The defenders had no means of countering this form of attack and had grimly to await almost certain death from beneath their feet. On 18th September, the mines were blown and wide areas of the Alcazar were completely destroyed. The Marxist Militia then advanced to overwhelm the survivors; but they were again met with violent automatic fire, and were hurled back by a counter-attack with the bayonet delivered by some of the garrison who had escaped the worst of the explosion by hiding in deep cellars.

The Commander of the government forces offered a safe conduct to the women and children and invited Colonel Moscardo, the officer commanding, to negotiate terms of surrender. These proposals were indignantly refused by the Colonel, who was supported wholeheartedly by the garrison and by the women. Cut off as they were from the outside world, they had a wireless set, which although too weak for use as a transmitter, served them as an efficient receiver; thus they were able to obtain news of General Franco's progress and to hear his promises of early support.

Unable to reduce the Alcazar by military means, the Marxist Militia endeavoured to break the resistance of Colonel Moscardo by offering to spare the life of his son, Angel Moscardo, whom they were holding as a hostage, if he would surrender the fortress. The Colonel refused this dastardly proposal and sent a message to his son to die like a Spaniard and a Christian. Angel Moscardo faced the firing squad and was shot down with the words " Long live Spain " on his lips.

Alarmed by the success of Colonel Yagué's column about Talavera, the Government opened the sluices of the Alberche River—the main water supply of Madrid—in a desperate effort to flood the country about Toledo and thus hold up the rebel advance. This expedient was, however, unavailing. On 22nd September, the relief column, commanded by Colonel Yagué, captured Maqueda, a strongly entrenched position, only twenty-five miles North-West of Toledo, and on 27th September, the insurgents, after driving away the besieging troops, relieved the Alcazar after a siege of seventy days. General Franco himself attended a parade and religious service for the survivors and bestowed on Colonel Moscardo the order of San Salvador, the Spanish

equivalent of the Victoria Cross. In his address, the General declared: "Defenders of the Alcazar, you are the pride of Spain. The old Alcazar is destroyed. We will build another. We are going to build a new Spain and an Empire."

THE CAMPAIGN IN THE NORTH

When, at the outbreak of the revolution, the Right Wing forces who were in possession of Navarre and of Old Castile, found themselves faced with the task of launching an offensive to the South against Madrid, they were compelled to take stock of the position in Vizcaya and in the Asturias, where the Government forces were in the ascendant. The rebels obviously could not march away to the Guadarrama front leaving important hostile elements unsubdued in their rear. Their first objective was, therefore, to clear Irun, San Sebastian and Bilbao of the Marxist troops. By the middle of September, General Mola had succeeded in capturing the two former towns, but Bilbao, assisted by the Government warships from the South, was too hard a nut for him to crack. The situation in Asturias, where the rebel stronghold of Oviedo was hard pressed by the Government forces, was also highly unsatisfactory and a relief column had to be despatched to its assistance. This column was able to effect a junction with the beleaguered garrison—rather in the manner of the first relief of Lucknow in 1857—but the combined rebel forces lacked strength to drive back the Government troops or to free any considerable portion of the Asturias.

CATALONIA

This province has, for many years, been a hot-bed of seditious and Marxist elements and Barcelona became notorious as the "Red" Headquarters in Spain. The Catalans, moreover, had frequently shown "separatist" tendencies and, even before the revolution of 1936, were gravitating towards semi-independence. On the outbreak of hostilities, their sympathies were with the Central Government in Madrid but their natural reaction was to fight for their own hand and to secure their own safety. Attack being the surest means of defence, they staged an assault on the nearest rebel forces in occupation of the Huesca–Saragossa line. This movement, which was of little value to the Government cause as a whole, had at any rate the effect of pinning down the rebel garrison of Sarragossa and of preventing them, had they wished to do so, from marching elsewhere. Considerable fighting took place round Huesca, on the Huesca–Lerida–Barcelona railway, but without decisive results.

It seems curious that the rebel troops at Saragossa, which holds a large military garrison, did not show a more offensive spirit in dealing

with the Catalonian militias, but it appears that the conscript soldiers of whom the Army is largely composed, are not whole-heartedly for the rebel cause. Their leaders have been unwilling to make any severe demands upon them and were content to maintain a relatively passive attitude in this sector. Throughout the Civil War, the brunt of the fighting on the insurgent side has been borne by the Spanish Legion and the Moorish *Regulares*, backed up by the young Fascist and Carlist Militias. The units of the Regular Army have, as a whole, not taken a prominent part in either camp. On the Government side, this has probably been due to the fact that they feel that the officers are not to be trusted. General Franco has not attempted to dissipate his energies by a premature attempt to subdue the Catalans. They will, no doubt, be the object of a special campaign later, when the insurgent power has been more fully consolidated.

THE WAR AT SEA

At the outbreak of the revolution and as soon as it was evident that the rebel main strength was located in Morocco, the task of the Government Navy was simple and straightforward. Ordinary common sense—apart from any knowledge of strategy—demanded that the fleet should obtain and keep control of the Straits of Gibraltar with the object of preventing the passage of General Franco's troops from Morocco. Aviation had, it is true, introduced a fresh element of uncertainty and warships obviously could not stop the insurgents from transporting small bodies of troops by air. But, as a means of ferrying large forces, aircraft have serious limitations; heavy baggage and stores, animals and wheeled transport cannot be conveyed by air, and unless these essentials can be provided on landing, the troops will be completely immobile. In order, therefore, to transport overseas and to maintain on arrival a strong military force the use of merchant vessels is obligatory.

The Government Navy accordingly instituted a patrol of the Straits, and on 21st July bombarded Ceuta, which was the rebel Headquarters and base port. This action seriously embarrassed the insurgents, who were hampered in passing their troops across by sea and were reduced to flying them over in small sections to Cadiz and Algeciras. But this state of affairs—so satisfactory to the Government—did not last long. Political ferment broke out in their fleet; and in several vessels the crews mutinied, and murdered their officers. From that moment, the efficiency and discipline of the navy declined and as the patrol of the Straits was relaxed the Government cause received a fatal blow.

Since telegraphic and telephonic communications between Spain and the outside world had been almost entirely cut off, authentic news was difficult to obtain. Grave fears were aroused for the safety of our

nationals and British men-o'-war were sent to Spanish ports where they assisted in evacuating thousands of refugees of many different races. This humane activity was deeply appreciated and the Governments concerned officially expressed their thanks. The Army was also able to help to a limited extent by organizing concentration camps at Gibraltar for the stream of Spaniards who fled from the turmoil across the boundary.

The Government navy now began to interfere with neutral shipping passing through the Straits and during August several incidents involving German and British vessels took place. The German Government, much incensed, ordered Rear-Admiral Karls, Commanding, " to answer force with force." The British Government, however, was more philosophical and merely sent a formal protest through diplomatic channels. It seemed obvious that the Spanish Government could exercise little or no control over their warships, which were mainly in the hands of irresponsible " Soviets."

By the middle of September, as the fleet had sailed for northern waters to protect the men's own homes, the command of the Straits passed into insurgent hands and rebel troops, artillery and munitions were pouring across to Southern Spain. On 29th September, a serious naval action took place, in which the insurgent cruisers, " Canarias " and " Almirante " sank the Government destroyer " Juan Fernandez " and an armed trawler. These men-o'-war later sank a Government submarine.

The Government, too, were making use of the sea communications and were shipping cattle from Belgrade to Barcelona in order to relieve the food shortage in Madrid. Rumours were rife that the insurgents were obtaining aid from certain foreign Governments through Portugal and through Galician ports, while Russia, for her part, was shipping food and warm clothing for the use of the Marxists of Catalonia.

It is of interest to note how large a part sea power is playing in what, at a superficial glance, would have appeared to be a purely land war.

BRITAIN'S POSITION IN PALESTINE

By Major E. W. Polson Newman.

On 7th November, 1918, an important joint declaration by Great Britain and France regarding British and French war claims in the East was made, the chief passages of which were as follows :—

" The object aimed at by France and Great Britain in prosecuting in the East the war let loose by German ambition is the complete and definite emancipation of the people so long oppressed by the Turks, and the establishment of national governments and

administrations deriving their authority from the initiative and free choice of the indigenous populations.

In order to carry out these intentions, France and Great Britain are at one in encouraging and assisting the establishment of indigenous governments and administrations in Syria (i.e. ex-Ottoman Syria which included Palestine) and Mesopotamia, now liberated by the Allies, and in territories the liberation of which they are engaged in securing, and in recognizing these as soon as they are actually established. Far from wishing to impose on the populations of these regions any particular institutions, they are only concerned to ensure by their support and by adequate assistance the regular working of governments and administrations freely chosen by the populations themselves. . . . Such is the policy which the two Allied Governments uphold in the liberated territories."

Later came Article XXII of the League Covenant, with the following provisions :—

"Certain communities formerly belonging to the Turkish Empire have reached a stage of development where their existence as independent nations can be provisionally recognized subject to the rendering of administrative advice and assistance by a mandatory until such time as they are able to stand alone. The wishes of these communities must be a principal consideration in the selection of a mandatory."

Let us now turn from theory to reality. The true reasons why Britain finds herself in Palestine and Transjordan are to be found in the circumstances surrounding the Balfour Declaration, British commitments to the Arabs, and imperial policy with regard to India. For Britain and her Allies, the policy indicated in the Balfour Declaration was most definitely a war measure well calculated to yield results of immense importance to the Allied cause, while for Britain herself there were special reasons why she should adopt and support the policy of the Declaration. These reasons may be found in the obvious advantage of covering the Suez Canal by an outpost territory in which important elements of the population would not only be bound to her by every interest, but would command the support of world Jewry. That was the long view of British imperial interests taken in the years 1916–17. It counted for much then, but even more after the War. Palestine was to become one of the chief pivots of British imperial air policy as a main aerial artery between East and West. In short, Palestine was to become the "Suez Canal of the Air," which was, geographically, side by side with the "Suez Canal of the Sea." But, apart from exclusive

British interests, the Balfour Declaration was essentially a measure adopted by the Powers of the Entente in the furtherance of their own vital interests. It was a statesmanlike effort to prevent the incalculable and universal influence of Jewry being exerted on the side of the Central Powers—as it was to a serious extent then being exerted—and to transfer this highly important influence to the cause of the Entente.

Support of Zionist ambitions promised much for the Entente. Jewish sympathies were, at that time, to a great extent anti-Russian, and therefore in favour of the Central Powers, and no ally of Russia could escape sharing that immediate and inevitable penalty for the long and savage persecution of the Jewish race. But the German General Staff wanted to attach Jewish support yet more closely to the German side. With their wide outlook on possibilities, they seem to have urged, early in 1916, the advantages of promising Jewish restoration to Palestine under an arrangement to be made between the Zionists and Turkey, backed by a German guarantee. The practical difficulties were considerable; the subject was perhaps dangerous to German relations with Turkey; so the German Government acted with caution. But the scheme was by no means rejected or even shelved, and at any moment the Allies might have been forestalled in offering this supreme bid. In fact, in September, 1917, the German Government were making the most serious efforts to capture the Zionist movement.

Another weighty reason why the policy of the Declaration was adopted by the Allies lay in the state of Russia herself. Russian Jews had been secretly active on behalf of the Central Powers from the outset; they had become the chief agents of German pacifist propaganda; by 1917 they had done much in preparation for that general disintegration of Russian national life, later recognized as the revolution. It was believed that, if Great Britain declared for the fulfilment of Zionist aspirations in Palestine under her own pledge, one effect would be to bring Russian Jewry to the cause of the Entente. It was also believed that such a Declaration would have a strong influence on world Jewry in the same way, and would secure for the Entente the aid of Jewish financial interests. It was further believed that this would greatly influence American opinion in favour of the Allies. The Declaration certainly rallied world Jewry, as a whole, to the side of the Entente; the War was won by the Entente; and to the Declaration as a means to that end may be attributed a share in achieving the great result. Directly and indirectly, the services expected of Jewry were not expected in vain, and were, from the point of view of British interests alone, well worth the price which had to be paid. Nor was it supposed that these services rendered were to be the last.

Our position in Palestine is also due to other considerations. Before the War it was an established axiom of our Eastern Policy that there should be a system of buffer States between the Mediterranean and India, but in the years following the War this policy entirely collapsed owing to the successful action of the Soviet Government in Russia and the development of a nationalist spirit in the Middle East. With the downfall of friendly Russia and with a temporarily unfriendly attitude on the part of Turkey, it was found necessary to find a substitute policy by forging a chain out of the Arab provinces of the old Ottoman Empire, in the hope that, with Persia and Afghanistan independent, India would enjoy a sense of security from the menace of Russia. Whereas, formerly, an alliance either with Russia or Turkey was considered a diplomatic necessity, it was now impossible to have an alliance with either of these Powers. Palestine, Transjordan, and Iraq now form important links in this new chain of buffer States, while British pledges to the Arabs on the subject of independence have been fulfilled in the case of Iraq, and to a less extent in the case of Transjordan. In Palestine, however, the pledge to the Arabs could not be fulfilled in the same way owing to the Balfour Declaration in favour of the Jews. Yet it was on the strength of the British pledge to the Arabs on the subject of independence, made to the Grand Sherif of Mecca, that they came into the War on the side of the Allies. Hence, British Governments have ever since been faced with the great difficulty of reconciling the two promises to Arabs and Jews respectively, which were both made at a time when the possibility of carrying them out was uncertain.

The clash between Arab and Jew was a foregone conclusion, and successive British Governments have been faced with the alternatives of maintaining peace by force, costing British money and British lives, or of modifying the methods of carrying out the elastic Balfour Declaration, by which they are pledged to facilitate the establishment in Palestine of a National Home for the Jewish people. There has been a reluctance to go to the root of Palestine's troubles—the legal basis on which British policy rests—and to concentrate on the methods of carrying out a badly drafted Declaration. As Arabs and Jews have always placed entirely different interpretations on the promises originally made to their respective races, political arguments on fundamentals have continued unceasingly. Until some definite action is taken to redraft the Palestine Mandate in the light of practical reality, there is no hope of peace in the Holy Land. As things are, neither Jews nor Arabs know how they stand or how they are going to stand in the future. The Jews do everything in their power to flood the country with Jewish immigrants in order to strengthen their position. The Arabs naturally become alarmed as they see more and more land passing

into the hands of Jews. They see no limit to Jewish immigration, and have no guarantee whatsoever against their one day becoming an insignificant minority. In wealth, leadership, and organization they cannot compete with the Jews and, being Orientals, they are convinced that British policy is influenced by Jewish money and that it is contrary to Arab interests. While it is true that the Jews bring money into the country and provide employment for the Arabs, this does not counterbalance the impression that they will eventually be squeezed out of their own country. These feelings have been at the root of all the troubles which have taken place in Palestine since Britain took over the Mandate, and when trouble breaks out Britain comes into disrepute for using force against a people who are struggling to attain their promised independence.

On many occasions attempts have been made to explain British policy in Palestine by means of White Papers, etc.; but these have done little or nothing to remove Arab fears. As they have never gone to the root of the matter, and have been based on the original drafting of the Balfour Declaration, they have merely been regarded as plausible means of keeping the Arabs quiet. Although several attempts have been made to produce some form of constitution to meet the strong Arab desire for self-government, these have failed owing to the difficulty of reconciling the two races, and it looks as if progress in this direction must come as the result of slow and gradual development. Meanwhile, the most urgent question is that of Jewish immigration. Either it must be considerably curtailed or there will be still more serious trouble in Palestine with the possibility of dangerous repercussions elsewhere.

The task of finding a way out of the present difficulty has been placed in the hands of a Royal Commission,[1] and many suggestions have been made by those whose opinions deserve serious consideration. Some

[1] The following were appointed on the 29th July as members of the Royal Commission of Enquiry to investigate the disturbances in Palestine :—

Lord Peel (Chairman), formerly Secretary of State for India.
Sir Horace Rumbold (Deputy Chairman), Ambassador to Germany from 1928 to 1933.
Sir Laurie Hammond, Governor of Assam, 1927–1932.
Sir Morris Carter, formerly Chief Justice of Tanganyika.
Sir Harold Morris, K.C., President of the Industrial Court.
Professor Reginald Coupland, Professor of Colonial History at Oxford.

The Commission is also charged with inquiring into the manner in which the Mandate is being implemented in relation to the obligations towards the Arabs and Jews and to investigate grievances.

In reply to a complaint that no member of the House of Commons had been appointed to serve on the Commission, the Colonial Secretary remarked that this was most desirable in order to avoid any political aspect being given to it.

years ago, Lord Lloyd said: "It is high time that steps be taken to obtain an authoritative, final, and honest decision as to the relative validity of those promises and commitments." He was referring to the pledges given at the end of the Great War to the Arabs and Jews respectively, and ever since given widely divergent interpretations by each race according to its individual aims and aspirations. Here lies the starting point and crux of the whole Palestine question, but it is essential that such a decision should be taken by a body of unchallengeable authority, free from the influences of party politics in London, or those representing racial conflict in Palestine. Another valuable suggestion comes from Mr. Amery, who maintains that the Arab and Jewish communities in Palestine should enjoy absolute political equality irrespective of numbers. By this means the building up of the Jewish National Home could not be impeded by the Arabs and would be kept within well defined limits.

It should always be remembered that the terms of the Mandate do not provide for the *conversion* of Palestime into a Jewish National Home, but for "the establishment in" Palestine of such an organization. In these circumstances it seems essential in the interests of both Arabs and Jews that the number of Jewish immigrants should be permanently limited. It also looks as if for some time to come the Arab and Jewish communities should be politically independent of one another. This might be accomplished along the lines of wider local self-government, combined with a grouping as far as possible of the two elements of the population in autonomous districts with their own institutions under the guidance and control of the Mandatory Power. The more co-operation between the High Commissioner and these self-governing districts the better for their development and for the prospects of their mutual co-operation later on. In this way non-Jewish interests could be consulted on matters of immigration. An Arab-Jewish Constitution seems at present to be out of the question, but there seems to be no reason why Arabs and Jews should not have their own local constitutions in areas of their respective majorities, and thereby gain experience in regulating their own affairs as well as in mutual political relationships, with a view to ultimate fusion when the interests of both races call for fuller co-operation. Under this system the danger of inter-racial outbreaks would be greatly reduced, although the process of grouping the two communities in independent areas would, owing to their present distribution, entail difficulties which could only be overcome by some sacrifice on both sides. The case of Jerusalem and the Holy Places calls for special provisions, the rights of each religious community being safeguarded under the direct control of the High Commissioner.

CORRESPONDENCE

[*Correspondence is invited on subjects which have been dealt with in the* JOURNAL, *or which are of general interest in the Services. Correspondents are requested to put their views as concisely as possible, but publication of letters will be dependent on the space available in each number of the* JOURNAL.—EDITOR.]

CAN METHODS OF WARFARE BE RESTRICTED [1]

TO THE EDITOR OF THE R.U.S.I. JOURNAL.

SIR,—Squadron Leader Knocker disagrees with my contention that gas is a more humane weapon than high explosives, although I have shown definitely that it causes a much smaller percentage of deaths and permanent disablement than other weapons. His reason is that public opinion in this country considers that gas is a barbarous weapon, and that in his opinion instinct in respect to this question is better than logic. Public opinion, which is entirely ignorant of the facts of the case, can hardly be said to be a relevant factor. In cases where instinct is held to be better than logic it is useless to argue. Whether the Italians would have been better advised to let their campaign be protracted one or two years longer in order not to offend public opinion in this country is a political question into which I do not feel competent to enter.

Squadron Leader Knocker says he is sure I would not advocate poisoning wells and water supply by a retreating army. Why not ? I would not poison wells or water required for the use of civilian populations, since I consider that the latter should not be injured more than the necessary operations against fighting forces make unavoidable. He would, I presume, be willing to drop bombs from the air on the women and children of the enemy's capital, and I cannot see that this is more humane than poisoning the water supply of troops. I would certainly poison the water of troops of a civilized Power if I could do it without causing suffering to civilians, and I would announce that I had done so : it would force their commanders to slow down their advance until supplies of water could be brought up. This military advantage is not one that I should consider myself bound to throw away for reasons of sentiment, nor because, as some say, it is one of the things which are not done. If, however, my country had signed any international convention forbidding this practice I should of course abstain from it.

All these agitations against the use of certain weapons on the ground that they are more inhumane than those to which we have grown accustomed appear to me entirely illogical and unreasonable. All war is inhumane. Nothing seems to me more inhumane than the practice of sending millions of young men to be helplessly mowed down by machine gun and artillery fire in trying to pass barbed wire obstacles.

[1] See Lecture in the JOURNAL for May, 1936, p. 264, and Correspondence in August number, p. 645.

If instinct is to be the guide, my instinct, which I consider just as worthy of respect as that of anyone else, revolts against the mass slaughter of youths, regardless of the nature of the weapon that kills them. If anyone disagrees with this view, and prefers to take public opinion as his guide, let him ask the survivors of the infantry who had to go over the top, or the parents of those who fell in doing so, what they think about it.

H. F. THUILLIER,
Major-General (retd.).

8th October, 1936.

THE WAR CABINET

TO THE EDITOR OF THE R.U.S.I. JOURNAL.

SIR,—Your reviewer of Miss Millin's book on General Smuts makes a slip, or perhaps repeats the author's slip, when he says on p. 693 of the August JOURNAL that the members of the War Cabinet were Lloyd George, Balfour, Bonar Law, McKenna, and Smuts.

McKenna went out with Asquith and was never even a member of Lloyd George's administration, still less of the War Cabinet. Balfour was Foreign Secretary, but not a member of the War Cabinet.

The original members of the War Cabinet were Lloyd George, Curzon, Milner, and Henderson, with Bonar Law, but the last named, as Chancellor of the Exchequer and Leader of the House of Commons, was not expected to attend regularly.

Lloyd George, Curzon, and Bonar Law remained in the War Cabinet until the end of the War. Smuts was added in June, 1917, and also remained until the end. Carson, from First Lord of the Admiralty, was added in July 1917, but resigned in January, 1918, and his place was not filled. Henderson resigned in August, 1917, and was replaced by Barnes. Milner became Secretary of State for War in April, 1918, and was replaced in the Cabinet by Austen Chamberlain.

ADRIAN KEITH-FALCONER,
Major.

11th September, 1936.

PREDICTED ARTILLERY FIRE

TO THE EDITOR OF THE R.U.S.I. JOURNAL.

SIR,—In his article, " A New Deal in Tactics," which appeared in the November, 1935, number of the R.U.S.I. JOURNAL, Brigadier M. N. MacLeod claims quite definitely that predicted artillery fire is now so accurate that " the only problem is that of locating the hole " in which the enemy is lurking. This is a very bold claim, which must surely admit of question.

The accuracy of predicted fire depends upon (1) the accuracy of the survey, and (2) the accurate calibration of the guns. Ths snag lies in (2). Range tables are compiled for part-worn guns, and it is common knowledge that a new gun shoots better, and an old gun worse, than the range-table gun. The art of calibration is to discover the correction required at every range to make a gun shoot the same as does that range-table gun. Besides the condition of the gun itself, the two factors which chiefly affect its shooting are the meteorological conditions and the propellant.

The meteorological conditions for which corrections have to be applied are the average temperature of the air and the average direction and force of the wind through which the shell passes on its way from gun to target. It is obvious that information on this point cannot be worked out by the Battery Commander himself, and the information is therefore given him by a weather expert. It is equally obvious that, however well the latter does his work, there is a possibility of error in his calculations, even for the moment when they are made. When they are a forecast of what he expects to happen in two or three hours' time, that possibility is enormously increased. In peace time, the weather forecast for any particular shot can be made within a few minutes of its taking place and practically at the same spot. In war, meteorological experts cannot be dotted about all over the country, and their forecasts can, therefore, only be made at certain more or less central spots, often comparatively remote from the guns and at certain definite times which may or may not happen to coincide with changes in weather conditions or with the needs of any particular battery on a given occasion. In hilly or very undulating country, for example, wind is notoriously uncertain, and the general prediction for such an area may not be correct for any particular battery in it. It is no exaggeration to say that the meteorological information given to the guns, which they are obliged to accept and use as given to them, is *invariably* incorrect, often no doubt only slightly, but sometimes wildly so.

Another source of error in calibrating is, as stated above, the propellant Different Lots of the same propellant give results which vary—some slightly, some very considerably, from the normal. During the late war, for example, I was officially informed that in an 18-pdr. gun two Lots of N.C.T. might give results differing from each other by as much as 60 f.s. It is patent that here is a source of error over which the Battery Commander has no control, and as regards which he is working in the dark, because information on the ballistic property of any particular Lot is not available.

The calculations, which a Battery Commander has to make in calibrating are quite simple, and it cannot be emphasized too clearly that the success of the process is dependent not upon him or his calculations, but upon the accuracy of the information on which those calculations are based. He is, in fact, working his calculations with three variables—the gun, the weather conditions, and the propellant; and with one constant—the map range. My mathematical friends tell me that completely accurate results under such conditions are unlikely.

Superimposed, so to speak, on the effect of the weather conditions when calibrating is the effect of the weather on the day of battle. This is no more likely to be absolutely accurately found than was the former. The two errors may cancel each other out, but equally they may both work the same way, in which case we may easily get short shooting, or what is only one degree better when supporting infantry, shooting over.

The most valuable use of calibration is to get the guns of a unit to shoot alike. But practical experience shows that neither in peace nor in war is calibration the simple process that it sounds. To claim that absolute accuracy can be guaranteed in predicted shooting is claiming far more than can be accomplished and is much to be deprecated in the interests both of gunners and infantry.

G. P. MACCLELLAN,
Lieutenant-Colonel, R.A. (retd.).

23rd July, 1936.

FLYING BOAT FALLACIES

To the Editor of the R.U.S.I. Journal.

Sir,—I feel obliged to reply to your correspondent's criticism in the August Journal of my humble attempt to analyse the potentialities of flying boats.[1] I sincerely hope that my "distinct bias against the boat" did not, in fact, cause me to weigh the subject unjustly. Far from dismissing all advantages the flying boat may possess, I qualified my criticism by naming the essential and valuable, if limited, tasks of which they are capable. I repeat, for survey work along undeveloped routes, or for supplying advanced temporary points, the flying boat is justified. Once, however, aerodromes exist along prepared routes, the boat becomes an expensive and inefficient luxury as compared with the land-plane.

It is undoubtedly true that the flying boat is capable of riding out considerable seas. As first pilot of such a craft some years ago, I anxiously watched my boat at her moorings for three days in a gale which at times registered 80 knots. During the gale, the boat actually left the water and flew for considerable periods, snatching at her moorings. After the storm, she was taken off and flown over a hundred miles back to the base. The point I would stress is that no flying boat yet designed is able to alight, and more particularly take off, with reasonable safety in the moderately adverse sea conditions we frequently experience. I would suggest that a dead flat calm (or rather a "glassy sea") reduces the take-off performance of the average boat by some 20 to 30 per cent. Such conditions, in my own recent experience when engaged in test work, have prevented a boat from taking off altogether when loaded to her normal maximum capacity despite the unlimited run which was available. Obviously, variable pitch airscrews and wing flaps improve performance in such conditions, but these developments aid land-planes to a similar degree. Improvement thus attained in the land-plane is not, as in the boat, dissipated in overcoming the unhelpful natural aerodrome.

Far from forgetting the flying boat's successful work in the Far East, I was a first pilot in such a craft, and incidentally in charge of maintenance for formations of this type on many flights in that part of the world. It was during a visit to Australia with flying boats that I first appreciated the magnitude of their maintenance problems. Your correspondent obligingly amplifies my inference that the flying boat cannot be operated from any and every stretch of water which Nature provides. The fact that "the end of stages on routes will naturally be situated in sheltered waters" is the point. Such ideal sites do not exist just as and where desired. The recent controversy between the authorities at Portsmouth and the Air Ministry published in the Press is illuminating. Questions as to a subsidy of £400,000 being insufficient as a part only of the sum required to furnish a flying boat base at Portsmouth are under consideration. Following initial outlay for such a base, which cannot be far below the sum required to prepare a suitable aerodrome site, maintenance in the way of dredging, etc., will still be an annual commitment at the flying boat base.

The advantage claimed for the boat, namely that it alone is capable of linking the Empire without flying over foreign territory, is, I suggest, misleading: such ability is surely dependent on range and not on type. Aircraft of the near future will be built for non-stop flights of 2,000 to 3,000 miles; with such ranges they

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[1] See "Flying Boat Fallacies" in the Journal for May, 1936, p. 397.

should be capable of bridging the distance between all essential points in our routes, even where unavoidable detours must be made. It appears to me that the recent awakening to the value of flying boats for the Empire is too late: the task for which they are best suited, that of opening and developing unprepared routes, is fast diminishing; already the world's air routes are far advanced in preparation for land-planes.

There may be some obscure advantage in the use of flying boats for civil air routes which is not apparent to the ordinary practical mind. For efficiency and reliability in operation, experience proves that the flying boat takes second place at present.

A. S. P.

29th September, 1936.

To the Editor of the R.U.S.I. Journal.

Sir,—May a mere student send a belated "hear, hear" to Air Marshal Higgin's letter which appeared in the August Journal. It is quite impossible for hostile aircraft to put the flying boat's aerodrome out of action. On the other hand quite a light bombardment can deny aerodromes and taking off places to the defenders for critical hours and perhaps days. Until the autogiro has been fully developed, the country that adopts aeroplanes to the exclusion of flying boats is asking for trouble.

This question of air attack seems to have engendered a certain amount of confused thinking. For instance, one reads of civilians and institutions being instructed in how to render houses gas proof by pasting paper, etc., round doors and windows. It does not seem to have occurred to the instructors that gas bombardment will rarely if ever take place unaccompanied by bombing with high explosive and incendiary bombs. The former will smash all windows for acres in a town, and the fire fighting occasioned by the latter will make protection from gas very difficult. It is doubtful if any enemy will trouble to drop gas on other than an area shattered and exposed by previous bombardment.

C. F. Milsom,

Major.

15th August, 1936.

GENERAL SERVICE NOTES

GREAT BRITAIN

PRIVATE MANUFACTURE OF ARMS

The following summary of the Report of the Royal Commission on the Private Manufacture and Trading in Arms (Cmd. 5292, the Stationery Office; 1s. 6d.) is reproduced from *The Times* of 2nd November, 1936:—

"The findings of the Royal Commission do not favour the abolition of private armament firms. The report, however, recommends a greater State control, particularly over profits and exports.

"The Commission propose that measures should be taken to restrict the profits of armament firms in peace-time to a reasonable scale of remuneration, designed not only to prevent excessive profits but to satisfy the public that they do so.

"With regard to exports, it is recommended that the practice of issuing open general licences for the export of certain classes of arms should be discontinued, that specific licences should be required in all cases, and in particular that a rigid control should be exercised over all exports of aircraft, whether classified as military or civil.

A Minister of Supply

"Another important recommendation concerns the organization of the necessary collaboration between the Government and private industry. The Commission propose that the responsibility for this should rest with a controlling body, presided over by a Minister responsible to Parliament, which would have executive powers in peace-time and war-time over all matters relating to the supply and manufacture of arms and munitions, costing, and the authorization of orders from abroad. The Government are urged to face without delay the problems involved in formulating plans for the conscription of industry in war-time.

"The Commission consider that the importance given in the public mind to the question of scandals in connection with the British armament industry has been greatly exaggerated. The charges made against firms in this country were few and the evidence scanty. . . ."

FRANCE

NATIONALIZATION OF WAR INDUSTRIES

A Bill relative to the nationalization of war industries received the assent of the Chamber on 16th and 17th July, 1936, and was then passed to the Senate for the consideration of that body. The Bill was debated during the 7th and 8th August, 1936, and was eventually adopted.

The law as adopted reads as follows :—

Article 1.—Before 31st March, 1937, decrees drawn up by the Cabinet, on the proposal of the Minister for National Defence and War, the Minister of Marine, or the Minister for Air, may order the total or partial expropriation of establishments engaging in the manufacture of or trade in war materials.

War materials are :—

(1) Firearms and ammunition for these ;
(2) Material destined for the carriage and utilization of fire-arms in war (military aircraft, warships, armoured cars, tanks, etc.) ;
(3) Material for protection against gas used in war.

Article 2.—As from the date of promulgation of the present law, no undertakings manufacturing or selling war materials as defined in Article 1, shall function, and their middlemen or publicity agents shall only carry on their work with the authorization of the State and under its control.

Article 3.—Decrees drawn up by the Cabinet, acting on the joint proposal of the Minister for National Defence and War and the Ministers for Marine and Air, shall regulate the measures for the execution of the present law.

The present law, discussed and adopted by the Senate and the Chamber of Deputies, shall be executed as a State Law.

A decree establishing the list of material subject to the provisions of the law, dated 11th August, 1936, referred to above and relating to the nationalization of the manufacture of war materials was signed on 14th August, 1936.

A NATIONAL DEFENCE COLLEGE

By Presidential Decree dated 14th August, 1936, a College for the Advanced Study of Questions relating to National Defence has been established in France at which under a selected body of officers of the three fighting Services and a certain number of civil servants representing the Ministries concerned, all problems relating to military strategy and those which have a repercussion on the conduct of war—political, financial, economic and moral, will be studied. The Minister of National Defence and War is responsible for the organization and administration of the College.

Courses at the College will be taken by officers of the rank of Colonel (Capitaine de Vaisseau), or Lieutenant-Colonel (Capitaine de Frégate) of the Army, Navy, and Air Force who have in principle already taken courses at the Schools for advanced training of their respective arm ; in addition, civilian officials, one for each of the remaining Ministries will take a course of instruction at the College. The appointment of Commandant of the College will be held in turn by a General Officer of the Army or the Air Force or an Admiral. The first Commandant to be appointed is Vice-Admiral Castex, Chief of the Second Naval Region and, incidentally, the author of *Strategical Theories* which deals in part with the co-ordination of the three Services.

The College, which will be located in Paris, will open on the 15th October, 1936, and the number of officers appointed to attend the courses has been fixed at ten for the Ministry of National Defence and War, and five each for the Ministry of Marine and the Air Ministry.

In its organization and functions the French College would appear to have been modelled on the lines of our Imperial Defence College.

NAVY NOTES

GREAT BRITAIN

Cruise of H.M. The King.

His Majesty left Windsor on 8th August for a cruise in the Eastern Mediterranean. At Sibenik, the Yugoslav port, he joined the steam yacht "Nahlin," and the destroyers "Grafton," Commander C. L. Firth, and "Glowworm," Lieutenant-Commander R. F. Jessel, acted as escort. The King left the yacht at Istanbul on 5th September for Vienna and England. Among the places he visited in "Nahlin" were landing beaches and battlefields in Gallipoli.

First Lord's Tour of Inspection.

Sir Samuel Hoare, First Lord of the Admiralty, went to Villefranche on 26th August and embarked in the Admiralty yacht "Enchantress," arriving at Malta on the 28th. He inspected a number of ships and naval establishments, and on the conclusion of his visit addressed a message to the C.-in-C., Mediterranean Fleet, thanking the officers and men "for the loyal and ardent work that has been carried out during the last twelve months. Once again the Royal Navy," he added, "has proved itself one of the great powers of world peace . . ."

After witnessing fleet exercises, Sir Samuel joined H.M.S. "Arethusa" and left for Haifa and Cyprus, where he rejoined the "Enchantress," which left Limasol for Malta on 6th September. From 16th to 18th September, he visited Gibraltar, and returned to Portsmouth on the 22nd.

Mediterranean Policy.

In a statement to the Press, the First Lord declared that, far from there being any prospect of Britain abandoning her position in the Mediterranean, it is the intention of the Government to maintain fully the communications through this vital highway of the Empire. There would be no scuttling from Malta. Rather the Government intended to face the new problems presented and make the position secure for the future. He was impressed with the advantages of Cyprus both for shipping and air communications and also as a possible summer station for the Mediterranean Fleet.

Flag Promotions and Retirements.

Admiral Sir George K. Chetwode, K.C.B., C.B.E., was placed on the retired list at his own request to date 19th August. In consequence the following promotions were made from the same date :—

Vice-Admiral Sir Charles M. Forbes, K.C.B., D.S.O., to be Admiral, and re-appointed in command of the First Battle Squadron and as Second-in-Command, Mediterranean, on promotion.

Rear-Admiral M. K. Horton, C.B., D.S.O., to be Vice-Admiral and reappointed in command of the First Cruiser Squadron on promotion.

Captain A. N. Dowding, A.D.C., R.N., to be Rear-Admiral.

Flag Appointments.

Assistant Chief of Naval Staff.—The King has approved the appointment of Rear-Admiral J. H. D. Cunningham, M.V.O., to be a Lord Commissioner of the Admiralty and Assistant Chief of the Naval Staff, in succession to Rear-Admiral C. E. Kennedy-Purvis, C.B., to date 2nd October, 1936.

First Cruiser Squadron.—The Admiralty announce that Rear-Admiral C. E. Kennedy-Purvis, C.B., is to be Rear-Admiral Commanding First Cruiser Squadron, in succession to Vice-Admiral M. K. Horton, C.B., D.S.O., to assume command about 1st November, 1936.

Rear-Admiral A. E. Evans, O.B.E., hauled down his flag in H.M.S. " Exeter " as Second-in-Command, First Cruiser Squadron, on 26th July, following the return of that ship from the Eastern Medirerranean, and the appointment lapsed.

Second-in-Command, Mediterranean.—Vice-Admiral Geoffrey Blake, C.B., D.S.O., assumed duties as Second-in-Command, Mediterranean Fleet, on 16th September, when his flag was hoisted in H.M.S. " Barham " at Gibraltar, in which it was to fly until the arrival of the " Hood " on the station. The " Hood " left Portsmouth on 10th October.

Commodore, South America.—Captain H. H. Harwood, O.B.E., R.N., has been appointed to H.M.S. " Exeter " in command, and as Commodore, Second Class, Commanding the South America Division of the America and West Indies Station, to date 17th September.

Malta Dockyard.—Rear-Admiral T. R. Ford, C.B., has been appointed Rear-Admiral in Charge, Malta, and Admiral-Superintendent, H.M. Dockyard, Malta, in succession to Vice-Admiral W. F. French, K.C.B., C.M.G., to assume command about 24th January, 1937.

Rear-Admiral, Alexandria.—The flag of Rear-Admiral R. H. T. Raikes, C.V.O., D.S.O., was struck in H.M.S. " Kate Lewis " at sunset on 1st August, 1936, when the appointment of Rear-Admiral-in-Charge, Alexandria, was terminated.

Engineer-in-Chief of the Fleet.

Engineer Vice-Admiral Sir Harold A. Brown, K.C.B., having been appointed Director-General of Munitions Production to the Army Council, Engineer Rear-Admiral G. Preece, C.B., has succeeded him as Engineer-in-Chief of the Fleet, with the rank of Engineer Vice-Admiral, to date 12th September, 1936.

Engineer Rear-Admiral A. G. Crousaz, formerly an Assistant Engineer-in-Chief, succeeded Engineer Vice-Admiral Preece as Deputy Engineer-in-Chief.

Director of Victualling.

Mr. C. R. B. Lane, Assistant Director of Victualling, has been appointed to succeed Mr. G. F. Cotton, M.V.O., O.B.E., as Director of Victualling, with effect from 17th August, 1936, in consequence of Mr. Cotton's appointment as a temporary additional Principal Assistant Secretary.

Personnel.

Lieutenant-Commanders' Retirement.—In view of the present state of the lists, the Admiralty anticipate that employment on the active list will be available for Lieutenant-Commanders up to the age of compulsory retirement, viz., 45 Therefore the retirement of Lieutenant-Commanders and Lieutenants under the.

age of 40 will be allowed only in exceptional circumstances. Retirement of officers over the age of 40 will be allowed only if the officer can be spared without inconvenience to the Service.

ACCELERATED PROMOTION TO SUB-LIEUTENANT.—Certain expedients to increase the numbers on the lists of Sub-Lieutenants and Sub-Lieutenants (E) to meet the increased requirements of officers that will arise in the next few years were announced on 24th September. Special entry and Mercantile Marine Cadets will train in H.M.S. " Frobisher " for two terms instead of three ; and ex-Dartmouth Cadets for one term instead of two. Midshipmen who left the " Frobisher " in April, 1936, and subsequently, will spend only two years at sea as midshipmen instead of two and a third years.

The Greenwich course for Acting Sub-Lieutenants, except those promoted from the Lower Deck, is to be abolished as from September, 1937. Acting Sub-Lieutenants joining Greenwich in September, 1936, and January and April, 1937, will do one term only. There will be no alteration to the average age of promotion to Lieutenant or Lieutenant (E), extra time being spent as Sub-Lieutenant corresponding to the reduction in time spent under training.

ADDITIONAL EXAMINATION FOR CADETSHIPS.—From 1937 an examination for appointments to Naval Cadetships (special entry) will be held by the Civil Service Commission three times a year, in March, June, and November, instead of twice a year. Candidates at the March examination, which will be held in London and not at other centres, will compete for appointments as Naval Cadets (Executive), Naval Cadets (Engineering), and Paymaster Cadets, R.N., only.

Consequent upon the introduction of an additional examination the upper age limit will be raised from 18½ years to 18 years 8 months. The examination to be held in March next will begin on the 2nd of that month. The closing date for applications is 19th January, 1937.

AWARDS AND PRIZES.—The Ogilvy Medal for 1936 has been awarded to Lieutenant C. R. G. Wilkinson, R.N., H.M.S. " Vernon."

The Gilbert Blane Medal for 1936 has been awarded to Surgeon Lieutenant-Commander J. M. Sloane, R.N.

The Henry Leigh Carslake Prize for 1936 has been awarded to Lieutenant-Commander W. T. Couchman, R.N., H.M.S. " Rodney."

The Ronald Megaw Memorial Prize for 1935-36 has been awarded to Sub-Lieutenant A. R. Hezlet, R.N., H.M.S. " Regulus."

INCREASE OF P.R.T. OFFICERS.—To ensure that P.R.T. officers obtain adequate seagoing and general service experience to enable them to compete on equal terms for promotion with other specialist branches, the number of officers in the branch is to be increased to give younger officers more seagoing experience and to enable selected officers to undergo a staff course.

LIFE ASSURANCE.—The life insurance scheme for naval officers, referred to in the last JOURNAL, will be made applicable to Cadets and Midshipmen (including Engineering and Accountant officers), with appropriately reduced premiums for officers under 18.

ACCOUNTANT BRANCH TITLES.—Revised titles were instituted by a Fleet Order dated 30th July for officers promoted to the ranks of Paymaster Lieutenant or Paymaster Lieutenant-Commander in the Writer, Supply, and Cookery branches. The initials in brackets—(W), (S) and (C)—which had formerly denoted these officers were abolished.

RAIL CONCESSIONS.—It was notified officially on 20th August that the railway companies concerned had agreed to extend the scope of the concessions for travelling to include retired naval and marine officers who are re-employed in a full-time capacity by the Admiralty—whether on naval pay and allowances or consolidated rates of pay—and their wives and families.

SERVICE CONDITIONS.—The first Review of Service Conditions which has been held since the change of system in 1932 under which the former Welfare Conferences were abolished took place in September and October. Commanders-in-Chief arranged for the necessary procedure in each of their commands. Organized men's meetings for the purpose, being contrary to the Regulations, were not allowed. Representatives of each division were selected by the divisional officer, and the men of the division were permitted individually to inform one or other of their representatives of any questions which they desired to bring forward.

TRAINING SHIP AT ROSYTH.—The late Cunard-White Star liner " Majestic " is being adapted at Southampton for use as a training ship for boys and artificer apprentices at Rosyth, until such time as the new training establishment to be built there is ready. About 1,500 boys and 500 apprentices will be accommodated in the vessel. The vessel will be renamed the " Caledonia " on taking up her new duties.

MARRIAGE ALLOWANCE INCREASED.—It was announced on 22nd September that their Lordships had decided that for men on the 1925 scale of pay, the rate of marriage allowance for a wife should be augmented as from 1st October, 1936, by a fixed weekly sum of 3s., the allowances for children remaining as before.

This concession applies only to naval ratings, and other ranks in the Royal Marines. There is no marriage allowance for naval officers.

MATERIAL.

NAMES OF NEW SHIPS.—The Admiralty announced on 28th October that the following names had been approved for ships of the 1936 new construction programme :—

Battleships.—" King George V," " Prince of Wales."

Aircraft Carriers.—" Illustrious," " Victorious."

Cruisers (9,000 ton improved Southampton class).—" Belfast," " Edinburgh."

Cruisers (new 5,000 ton class).—" Dido," " Euryalus," " Naiad," " Phœbe," " Sirius."

Flotilla Leader.—" Jervis."

Destroyers.—" Jackal," " Jaguar," " Jamaica," " Janus," " Javelin," " Jersey," " Jubilant," " Jupiter."

Destroyers (" Tribal " class).—" Ashanti," " Bedouin," " Eskimo," " Mashona," " Matabele," " Punjabi," " Sikh," " Somali," " Tartar."

Minelaying Submarine (" Porpoise " class).—" Seal."

Submarines (" Triton " class).—" Thetis," " Triumph," " Trident," " Tribune."

Submarines (new small type).—" Undine," " Unity," " Ursula."

Sloop Minesweepers (" Halcyon " class).—" Gossamer," " Leda," " Seagull."

Convoy Escorts (" Bittern " class).—" Egret," " Heron."

Coastal Sloop (" Kingfisher " class).—" Widgeon."

Surveying Ships.—" Franklin," " Jason " (minesweeper type).

River Gunboat.—" Scorpion."

Special Service Vessels.—" Lassoo " (tender to anti-submarine school), " Linnet " (tender to H.M.S. " Vernon," torpedo school).

Trawlers.—" Mastiff," " Mascot."

Tugs (new type).—" Brigand," " Buccaneer."

1936 PROGRAMME.—Orders for the two " Southampton " class cruisers of the 1936 programme were placed in August with Messrs. Harland and Wolff, Belfast, and Swan, Hunter and Wigham Richardson, Wallsend-on-Tyne. The machinery of the latter ship will be supplied by the Wallsend Slipway and Engineering Company.

Destroyers of the 1936 programme, ordered in May, have been laid down as follows :—two by Vickers-Armstrongs, Walker-on-Tyne, 5th August ; one by A. Stephen and Sons, Govan, 24th September ; two by Swan, Hunter and Wigham Richardson, Wallsend-on-Tyne, 26th September ; and two by the Scotts' Shipbuilding and Engineering Company, Greenock, 1st October.

The two surveying ships of the 1936 programme were ordered early in August from the Ailsa Shipbuilding Company, Troon. The machinery will be supplied by Messrs. John I. Thornycroft and Company, Woolston, Southampton. The Ailsa Company had not until now received a ship contract from the Admiralty since the War.

1935 PROGRAMME.—The keel of the cruiser " Gloucester " was laid at Devonport Dockyard on 22nd September. She is the last of the three cruisers of this programme to be begun.

The flotilla leader " Inglefield " was launched from the yard of Messrs. Cammell Laird and Company, at Birkenhead, on 15th October.

The destroyer " Imogen," first of the eight of the " Intrepid " class, was launched on 30th October by Messrs. Hawthorn, Leslie and Company, Hebburn-on-Tyne. The " Icarus " should be launched on 25th November at Clydebank by Messrs. John Brown and Co., Ltd.

The sloop minesweeper " Hebe " was launched at Devonport on 28th October.

Motor torpedo boat No. 4, one of the six built under the 1935 programme by the British Power Boat Company, Southampton, was commissioned on 22nd September as tender to the " Vernon."

1934 PROGRAMME.—The cruiser " Birmingham " was launched at Devonport on 1st September, and the cruiser " Aurora " at Portsmouth on 20th August.

The first of the destroyers of this programme have been completed. H.M.S. " Hostile," built by the Scotts' Company, Greenock, commissioned at Chatham on 10th September. H.M.S. " Hunter," built by Swan Hunter, Wallsend, commissioned at Devonport on 30th September. Others of the class are due for completion by the end of the year, for service in the Second Destroyer Flotilla, Mediterranean Fleet.

H.M.S. " Spearfish," first of the three submarines of the 1934 programme, and built by Cammell Laird and Company, Birkenhead, commissioned on 5th September. The " Rorqual "—Vickers-Armstrongs, Barrow—is completing afloat. The " Sunfish " was launched at Chatham on 30th September.

All the six sloops of the 1934 programme are now complete. The " Aberdeen " is relieving the " Bryony " in the Mediterranean.

The " Fleetwood " has been commissioned for trials and is due to commission for service on 17th November.

The " Niger " and " Salamander " have relieved the " Tiverton " and " Selkirk " in the First Minesweeping Flotilla.

The coastal sloops " Mallard " and " Puffin " have commissioned for service in the First Anti-Submarine Flotilla, Portland.

The surveying ship " Stork " replaces the " Ormonde," which has been paid off and prepared for sale.

1933 PROGRAMME.—The cruiser " Penelope," first of the three in the 1933 programme, is due for completion during November, and will join the Third Cruiser Squadron in place of the " Durban." The " Southampton " and " Newcastle " are due for completion about March, 1937.

The " Grampus," last of the three submarines of this programme, was due to commission on 7th November for service in the 2nd Submarine Flotilla, Home Fleet.

SPECIAL SURVEYING SHIP.—A specially designed non-magnetic ship to be called the " Research " has been ordered from Messrs. Philip and Son, Ltd., Dartmouth. She will replace and carry on the work done by the " Carnegie "—an American vessel operated by the Carnegie Institution of Washington, having for its object the determination of the magnetic properties of the earth at sea. The " Research " will be built of teak and will depend mainly on sail power.

ORGANIZATION AND DISTRIBUTION.

SECOND BATTLE SQUADRON.—H.M.S. " Resolution " was commissioned at Portsmouth with a Chatham crew on 15th September for service in the Home Fleet. H.M.S. " Royal Oak " was commissioned at Devonport on 21st August after large repairs, and was subsequently ordered to become flagship of the Rear-Admiral, Second Battle Squadron, in place of the " Royal Sovereign." The strength of this squadron has increased from four battleships to six.

BATTLE CRUISER SQUADRON.—H.M.S. " Hood " arrived at Gibraltar on 13th October to join the Mediterranean Fleet. The flag of the Vice-Admiral, Second-in-Command, was transferred to her from the " Barham."

DESTROYER FLOTILLA EXCHANGE.—The 4th Destroyer Flotilla, after service in Spanish waters, returned to England towards the end of August to recommission for service in the Home Fleet. The 2nd Destroyer Flotilla, reconstituted with new vessels of the " Hero " class, is to replace it in the Mediterranean.

FLOTILLA RENAMED.—The 20th Destroyer Flotilla changed its title to the 1st Destroyer Flotilla on 1st September. Since it was constituted as an additional flotilla during the emergency, this force has been reorganized with new destroyers of the " G " class. The former 1st Destroyer Flotilla returned home to pay off into reserve.

ANTI-AIRCRAFT CRUISERS.—The two old cruisers, " Curlew " and " Coventry," which were specially commissioned for service with the Mediterranean Fleet as anti-aircraft ships have been withdrawn to reserve.

RESCUE WORK IN SPAIN.

The civil war which broke out in Spain on 18th July led to many calls upon the British Navy for help in the evacuation of refugees. The First Lord stated that about 3,500 men, women and children had been evacuated from Spanish ports by British warships up to the middle of August and embarkations were still taking place. On 8th September, it was officially announced that 4,450 refugees had been evacuated from the North-East Coast of Spain and the Balearic Islands alone. Of these, 1,771 were British (638 men, 882 women and 251 children), and the total was made up of 1,694 men, 2,069 women, and 687 children.

At the end of July, there were 36 vessels of the Royal Navy in Spanish waters or at Gibraltar. On 17th September, there were still 25 British war vessels standing by in case of need—nine in the Northern Area, ten in the Southern Area, four off the North Coast of Spain, and one at Santa Cruz.

The "Queen Elizabeth," flagship of Admiral Sir Dudley Pound, left Malta on 31st July for Gibraltar, arriving on 3rd August. The Admiral left next day for Barcelona, Cartagena, Alicante and Valencia, returning on 8th August. He proceeded to Malta a fortnight later.

Never before, it is believed, has the Navy had to undertake rescue work on so large a scale and for so protracted a period. A Fleet Order, issued on 22nd October, stated :—

"A large number of letters of appreciation for the services rendered by H.M. ships in the evacuation of British subjects and foreign nationals from Spain since the beginning of the Civil War have been received in the Admiralty. In particular, official letters have been received from the Belgian, Dominican, Finnish, German, Netherlands, Norwegian, Peruvian, Polish, Swedish, Swiss, United States and Venezuelan Governments, from the Cuban Minister in Paris, and from the Senate of the Free City of Danzig, expressing appreciation for the assistance given to their respective nationals and citizens.

"Many letters have also been received from individuals and firms of various nationalities, asking that an expression of their thanks may be forwarded to the officers and men of the ships who have given assistance during this time.

"All these letters express admiration for the efficient and courteous way in which the work of evacuation has been carried out and for the kindness and willingness of all the officers and men concerned. Their Lordships have pleasure in informing H.M. ships of these messages and desire to add an expression of their own high appreciation of the efficiency with which this duty has been and is still being carried out."

Work in Palestine.

In addition to the calls upon its services in connection with the Spanish revolution, ships of the Mediterranean Fleet have been co-operating with the Sister Services in connection with the unrest in Palestine. The Third Cruiser Squadron under Rear-Admiral G. H. D'O. Lyon, C.B., in the "Arethusa" has been at Haifa for most of the past three months.

An armoured train was improvized out of old rolling stock to patrol the Palestine section of the important Hedjaz Railway. The crew of about twenty was provided from H.M.S. "Arethusa," and later from H.M.S. "Valiant." On 8th October, it was reported from Haifa that the naval crews of the "Jordan Queen," as the armoured train was called, were to be replaced by soldiers who had arrived with the reinforcements from England. The Navy, however, was to continue to co-operate by providing engine drivers and joint patrols.

Among the ships which provided patrols for the streets of Haifa were the "Arethusa," "Delhi," "Durban," "Despatch," "Sussex," "Valiant," and "Cyclops."

Navy Week.

All records were broken by the attendances at the ports during Navy Week from 1st to 8th August. The aggregate figures were :—

Portsmouth	. .	206,759, as against 161,832 ; increase, 44,927.
Chatham	. .	116,688, as against 88,928 ; increase, 27,760.
Devonport	. .	111,327, as against 82,247 ; increase, 29,070.

ROYAL NAVAL VOLUNTEER SUPPLEMENTARY RESERVE

New Naval Reserve for Yachtsmen

On 27th October, the First Lord of the Admiralty announced the formation of a new Reserve. The Admiralty had long been aware, he said, that there is a large body of men in this country who are interested in yachting and other seafaring pursuits and who, though they are ineligible through age or place of residence, or unable through lack of time, to join the R.N. Volunteer Reserve, are yet anxious to use their experience of the sea in the defence of their country in time of war.

In the new Reserve, yachtsmen who wish to be ear-marked for training as executive officers in the R.N.V.R. in the event of war would be enrolled. Membership of what will be called the Royal Naval Volunteer Supplementary Reserve will involve no actual training in peace time, nor will the members wear any uniform, but on being called up they will be classified with Sub-Lieutenants of the regular R.N.V.R. and will be eligible for promotion and grant of acting higher rank in exactly the same way as the officers of the R.N.V.R. The age limit for entry will be 18 to 39 inclusive.[1]

DOMINION NAVIES

ROYAL AUSTRALIAN NAVY

Expansion Measures.—The armaments of the 8-in. gun cruisers are to be modernized. The personnel will be increased to 4,290 men, an increase of 1,050 since 1934. £3,237,387 is to be spent on the Navy, and three cruisers, one leader, two destroyers, two sloops and a surveying ship will eventually be commissioned.

Locally-Built Destroyers.—The Commonwealth Government propose to build destroyers in Australia and to maintain their own shipbuilding industry. As a first step, they have ordered a flotilla leader to be armed with 6-in. guns from the Cockatoo Island Dockyard.

Return from Mediterranean.—The " Australia " and " Sydney " arrived at Fremantle on 2nd August and at Sydney on 11th August on their return from service with the Mediterranean Fleet during the emergency.

NEW ZEALAND DIVISION, ROYAL NAVY

Arrival of the " Achilles."—H.M.S. " Achilles," Captain I. G. Glennie, arrived at Auckland on 6th September to join the New Zealand Division in succession to the " Diomede," which had returned to England earlier after special service at Aden during the emergency.

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[1] A Reserve very much on these lines was proposed in an article published in the Journal of August, 1935, p. 584—" Yachtsmen as a Naval Reserve," by T. W. MacAlpine.

PACIFIC ISLANDS CRUISE.—The sloops " Leith " and " Wellington " returned to Auckland on 1st October from independent cruises among the Pacific Islands. A proclamation reaffirming Britain's title to a number of islands in the Phœnix Group, South Pacific, was pasted on notice boards attached to palm trees on the islands, stating that, " This island belongs to King Edward VIII."

ROYAL CANADIAN NAVY

VISIT OF THE " SAGUENAY."—The destroyer " Saguenay," Commander W. J. R. Beech, R.C.N., arrived at Boulogne on 24th July escorting the Canadian pilgrims to the unveiling of the Vimy Ridge memorial. She afterwards visited Tilbury and Portsmouth, where she was open to the public during Navy Week. During the latter half of August she made a cruise to St. Helier (Jersey) and Brest, and left Portland for Halifax on 4th September, arriving on the 12th.

SOUTH AFRICAN NAVAL SERVICE

OFFICER-INSTRUCTOR.—Lieutenant-Commander H. J. A. S. Jerome, R.N., has been lent to the South African Naval Service for three years from 20th November, and will succeed Lieutenant-Commander H. N. C. Webber as Officer-Instructor to the South African Division, R.N.V.R., and in command of the depot-ship " Afrikander II."

FOREIGN NAVIES

ARGENTINA

NEW CONSTRUCTION.—In addition to the seven destroyers and the training cruiser ordered from British yards, there is a group of seven small mine-sweepers being built at home for the Argentine navy. The second of the series, the " Drummond," has been launched at Rio Santiago.

DENMARK

TARGET SHIP.—The coast defence ironclad " Olfert Fischer " has been removed from the effective list. Built in 1903, she displaced 3,400 tons and carried two 9.4 and four 4.5-in. guns. It is understood that she will be used as a target ship.

FRANCE

ORGANIZATION.—The following nomenclature of the squadrons has been adopted :—

Escadre de l'Atlantique—formerly 2nd Squadron.
Escadre de la Mediterranée—formerly 1st Squadron.

These two squadrons when united will constitute the *Flotte de Haute Mer* (High Sea Fleet).

The following changes in nomenclature are also being made :—

Light Divisions will be called *Divisions de Croiseurs* and *Division de Contre-Torpilleurs* Divisions according to whether they are composed of cruisers or destroyers. The denomination " Light Division " will be retained for mixed forces of cruisers and destroyers.

Escadre de Croiseurs will denote a force of several divisions of cruisers.
Escadre Légère will denote a force composed of several divisions of *contre-torpilleurs* or a mixed force of one or more divisions of cruisers and one or more divisions of *contre-torpilleurs*.

SECOND SQUADRON.—According to a Press report the present composition of the Second Squadron is three battleships, two cruisers, thirteen flotilla leaders, nineteen destroyers, the "Jules Verne," the "Surcouf," eight first-class submarines, eight second-class submarines, and the aircraft carrier "Béarn."

The cruisers "La Galissonniére," "Jean de Vienne" and "Marseillaise" are joining the squadron as they complete. The new battleship "Dunkerque" is also due to join the squadron this autumn. It is reported that her speed trials have been "particularly brilliant."

OLD BATTLESHIPS CONDEMNED.—The old battleships "Diderot" and "Voltaire," launched in 1909, have been condemned. The latter, after being disarmed, has been taken into use as a harbour training ship. The third ship of the class is the "Condorcet." These three vessels displaced about 17,600 tons and carried four 12-in. and twelve 9.4-in. guns. They were, therefore, somewhat similar to our "Lord Nelson" class.

GERMANY

NEW TRAINING SQUADRON.—It is understood that a new Training Squadron is being formed consisting of the old battleships "Schlesien" and "Schleswig Holstein," and the cruiser "Emden." According to a Press report, the "Schleswig Holstein" has been specially adapted as a cadet ship. She now has oil fuel firing, and all the guns except the forward four 5.9-in. and all the torpedo tubes have been removed. She was due to leave on a foreign cruise about the middle of October with 180 cadets. The programme is to include South America and Mexico, returning via Ireland. The cruiser "Karlsruhe," which has hitherto been employed on training duties, is rejoining the fleet.

HELIGOLAND.—According to a French report, 11.8 in. navy guns and 10.7-in. howitzers are being mounted on Heligoland, which is being restored as a base for submarines and destroyers.

NEW SUBMARINES.—A second squadron of submarines, probably eight in number, is being added to the German navy. It is to be named the "U-Boat Flotilla Saltzwedel." Lieutenant Saltzwedel was a U-Boat commander who acquired fame for the large number of merchant vessels which he sank in the War.

SPANISH CIVIL WAR.—The battleships "Admiral Scheer" and "Deutschland" have been visiting the Spanish coast for the protection of German citizens.

When the German steamer "Kamerun" was stopped and searched by the Spanish cruiser "Libertad" on the 19th August, the C.-in-C. of the German battle squadron telegraphed to the C.-in-C. of the Spanish Government fleet to say that this action was an offence against the rights of free navigation on the open seas. He was not prepared to tolerate such acts of aggression, and had instructed his naval forces to meet every unjustified act of aggression on the part of the Spanish ships with force.

GREECE

NEW CONSTRUCTION.—Four destroyers, displacing 1,450 tons each, have been ordered from the Fairfield Shipbuilding and Engineering Co. by the Greek Government. It is understood that the armaments will be supplied by Krupp.

ITALY

NEW BATTLESHIPS.—The armament of the two new battleships "Vittori Veneto" and "Littorio" will be nine 15-in., twelve 6-in., twelve 3.5-in. and twenty A.A. machine guns. They will also carry four aircraft each.

RECONSTRUCTION.—Further details are now available with regard to the reconstruction of the two battleships "Giulio Cesare" and "Conte di Cavour." Their new armament will be ten 12.6-in., twelve 4.7-in., eight 3.9-in., and twenty A.A. machine guns. This is an appreciable reduction from the original armament of thirteen 12-in., eighteen 4.7-in., thirteen 3-in. and six 3-in. A.A. guns. The ships are being increased in length by 34 ft., and the draught by 1 ft. 9 in. The displacement will be 2,000 tons greater. The greatest improvement will be in speed, which is being increased from 22 to 27 knots: the new engines will develop 75,000 h.p. against the original 31,000. Each ship will carry four aircraft.

JAPAN

NEW BATTLESHIPS.—It is understood that steps are to be taken to make a start in the near future to replace the four oldest battleships by new vessels. The latter will form part of the third replenishment programme, to be extended over five years and for which the estimated expenditure is about 2,000,000,000 yen.

NETHERLANDS

NEW CRUISER.—It is reported that on her trials earlier in the year the cruiser "De Ruyter" attained a speed of over 32 knots. She is to have a crew of 450.

SIAM

NEW TRAINING SHIP.—The training ships "Taun" and "Macklong" were completed by the Japanese Uraga Dockyard this summer for the Siamese Navy. In addition four submarines are said to be under construction at the Mitsubishi Dockyard; two gunboats at Kobe; three coast defence ships at Ishikawajima Yard, in Tokio; and a transport at Hakodati. In all, this new programme includes twelve ships, and the cost is about 23,000,000 yen. It is due for completion next April. In addition, seven torpedo boats are building in Italy.

SOVIET UNION

DISPOSITION OF THE FLEET.—The following was the disposition of the Soviet Fleet at the beginning of the current year, according to a report in the German Press:—

Baltic Fleet.—Two battleships, one cruiser, eight destroyers, three torpedo boats, sixty fast motor boats, forty submarines, two minelayers, and sixteen minesweepers.

White Sea.—Six destroyers, five torpedo-boats, and six submarines.

Black Sea.—One battleship, four cruisers, five destroyers, two torpedo boats, twenty submarines, twenty fast motor-boats, and a number of minelayers and sweepers, etc.

Far East.—Thirty submarines, thirty fast motor-boats, six gunboats, and a number of minelayers and sweepers, etc.

Amur River.—Seventy-five armed motor-boats and thirty-two river gunboats.

SWEDEN

NAVAL POLICY.—The Chief of the Naval Staff in a report on estimated expenditure for the budgetary year 1937–38 expressed strong views in regard to the deficiencies of the existing defence organization. He emphasized that naval defences must be based on the co-operation of naval forces and aircraft. The Navy, he said, had been neglected as compared with the Army and Coast artillery. It was necessary to increase the personnel, especially the corps of officers. He suggested that a sum of 7,600,000 kroner should be allocated towards the cost of half a flotilla of motor torpedo boats with a view to completing ultimately a full flotilla of twelve units.

NEW CONSTRUCTION.—An inquiry is taking place as to the practicability of replacing the coast defence ships by vessels of a different type or size.

A replacement programme makes provision for two destroyers of the " Ehrenskold " type, one smaller destroyer, and six submarines. The coast defence ships of the " Sverige " type are to be modernized. The total cost of this programme, which is to be spread over ten years, will be 53,000,000 kroner.

AIRCRAFT VERSUS A.A. GUNS.—A Swedish artillery expert has made some calculations giving the chances of diving aircraft hitting the target when the latter is defended by Bofors' new 40-mm. automatic guns.

He estimates that aircraft dive from a height of 2,000 m. to 1,000 m. at a speed of 150 m. per second. In spite of this somewhat exaggerated speed, the chances of the aeroplane against one gun only are very small. The gun has a firing capacity of 120 rounds per minute, and as the muzzle velocity of the projectile is 900 m. per second it will travel on a very straight course : at a height of 1,800 m. its deviation is only 2 m. from the aiming line. During the dive the aircraft will meet 17 to 18 shots ; it will have one chance in ten to pass 1,500 m., and one in twenty-five to pass 1,300 m., and only one in 120 to reach 1,000 m.

The weight of the shell is about 1 kg., and one hit should be sufficient to bring down the aircraft.

The 25-mm. M.G. has a greater firing capacity—about 180 per minute, but the line of fire will not be so straight and the weight of the projectile is less.

It should be added that, in the event of mobilization, the Swedish battleships will, beside their ordinary anti-aircraft guns, be fitted with a considerable number of both 40-mm. automatic guns and 25-mm. anti-aircraft machine guns.

UNITED STATES

DEATH OF REAR-ADMIRAL W. SIMS.—The Commander of the United States naval forces in Europe during the War—Rear-Admiral W. S. Sims, died at the age of 78 on 28th September, at Boston. Sims was born a British subject at Port Hope, Ontario and, although he left Canada at an early age to live in the United States, he always retained a marked affection for Britain and admiration for the Royal Navy. He was a personal friend of Sir Percy Scott, and was in some ways his counterpart as a gunnery enthusiast in the early years of the present century. It was Theodore Roosevelt who summoned him to take charge of the Bureau of Target Practice with a view to overhauling drastically the gunnery of the United States fleet, and he served there with marked success for six years.

Admiral Sims arrived in London in 1917, a few days before the United States entered the War, with a special mission to discover how his country could best assist, especially in the task of dealing with the German submarine campaign. He was

given a room at the Admiralty and was mainly responsible for creating the very close and cordial co-operation with which the American naval forces worked with our fleet until the end of hostilities.

After the War he was appointed President of the Naval War College at Newport, reverting to the rank of Rear-Admiral from that of full Admiral, which he had been granted during his service in England. He retired for age in 1922.

He was created an honorary G.C.M.G., and also received a number of other foreign decorations; but declined the offer of the United States Distinguished Service Medal owing to a disagreement with Mr. Daniels, Secretary of the United States Navy during the War.

Outspoken and sincere, he will always be remembered with much respect and affection by his many admirers in the British Navy.

NEW CONSTRUCTION.—A useful table showing the progress of new construction is published periodically in *The United States Naval Institute Proceedings*. The table which appears in the October number gives the following information :—

Type.	*Name or Number.*	*Due for Completion.*
Aircraft Carriers	" Yorktown "	March, 1937
	" Enterprise "	January, 1937
	" Wasp "	September, 1938
Heavy Cruisers	" Vincennes "	January, 1937
	" Wichita "	May, 1938
Light Cruisers	" Brooklyn "	June, 1937
	" Philadelphia "	July, 1937
	" Swannah "	June, 1937
	" Nashville "	September, 1937
	" Phœnix "	December, 1937
	" Boise "	December, 1937
	" Honolulu "	September, 1937
	" St. Louis "	January, 1939
	" Helena "	May, 1939
Submarines	One " P " class	December, 1936
	Six " P " class	During 1937
	Five " S " class	„ 1938
Destroyers (1,850 tons type) ..	Three	„ 1936
	Three	„ 1937
	Three	„ 1938
Destroyers (1,500 tons type) ..	Twelve	„ 1936
	Seventeen	„ 1937
	Ten	„ 1938
Gunboats	Two	„ 1936

ARMY NOTES

HIS MAJESTY THE KING

His Majesty has been pleased to approve the following appointments :—

COLONEL-IN-CHIEF.—H.R.H. the Princess Royal, C.B.E., to be Colonel-in-Chief, The Indian Signal Corps.

AIDES-DE-CAMP TO THE KING.—Colonel G. H. Gill, C.M.G., D.S.O. ; Colonel J. E. Duigan, D.S.O., New Zealand Staff Corps ; Colonel (temp. Brig.) A. F. A. N. Thorne, C.M.G., D.S.O. ; Colonel (temp. Brig.) D. G. Johnson, V.C., D.S.O., M.C.

COLONELS OF REGIMENTS.—Lieutenant-General Sir Charles Bonham Carter, K.C.B., C.M.G., D.S.O., as Colonel, The Queen's Own Royal West Kent Regiment ; Major-General J. Kennedy, C.B., C.M.G., D.S.O., as Colonel, The Buffs (Royal East Kent Regiment).

CORPS OF ROYAL ENGINEERS.—The creation of the office of Chief Royal Engineer of the Corps of Royal Engineers, and of the appointment thereto of General Sir Bindon Blood, G.C.B., G.C.V.O., Colonel Commandant, Royal Engineers, is announced.

The creation of the office of Chief Royal Engineer restores to the Royal Engineers an old military appointment, originally styled " Chief Engineer of the Kingdom," which existed from the Restoration down to its abolition in 1802. The holder of the appointment is titular head of the Corps, and thus speaks with authority on questions of regimental importance, as does the Master Gunner, St. James's Park, in the case of the Royal Artillery. General Sir Bindon Blood has been associated with the Corps of Royal Engineers since 1860. He is the senior Colonel Commandant of the Corps.

Sir Bindon Blood, who was born in County Clare 94 years ago, first saw active service in the Jowaki Expedition of 1877–78. For this he was awarded the medal and clasp, and is probably one of the last surviving recipients. He has a long and distinguished campaigning record and served in the Zulu War, 1879 ; the Afghan War, 1880 ; Egyptian Campaign, 1882 ; Chitral Relief Force, 1895 ; Malakand and Buner Field Force, 1897–98 ; and Eastern Transvaal, 1901. His autobiography was published in 1933, under the title " Four Score Years and Ten."

HOME

APPOINTMENTS.

The following appointments are announced :—

Major-General R. H. Carrington, D.S.O., to be Major-General, Royal Artillery, Army Headquarters, India.

Major-General C. B. D. Strettell, C.B., I.A., to be Commander, the Peshawar District ; 2nd November, 1936.

Major-General J. M. R. Harrison, C.B., D.S.O., to be Commander, the 2nd Anti-Aircraft Division (T.A.) ; 1st September, 1936.

Major-General M. S. Brander, O.B.E., A.M.I.Mech.E., to be Inspector, The Royal Army Service Corps.

Major-General G. J. Giffard, D.S.O., to be Inspector-General, Royal West African Frontier Force and King's African Rifles; from 13th October, 1936.

Major-General Giffard, who was promoted in April of this year, at the age of 48, has had a long and varied experience of Africa. He joined the Queen's Royal Regiment in 1906 and after 7 years' regimental service was seconded to the King's African Rifles and saw service with them in 1913 against the Mereham Tribe. During the War he served in British, German, and Portuguese East Africa, Nyasaland and Northern Rhodesia, rising to the rank of Column Commander (Honorary Colonel). He was wounded, received four mentions in despatches and was promoted Brevet Lieutenant-Colonel in 1918. Since the War he has filled the appointments of Staff Officer to the Inspector-General, West African Frontier Force; G.S.O.2, the Staff College; G.S.O.1, Aldershot; and has been A.D.C. to the King.

General

Commissions in the Regular Army.—Thirty vacancies for commissions in the Cavalry, Royal Artillery, Infantry, and Royal Tank Corps of the Regular Army will be available for competition at the examination to be held in December next for candidates from among officers of the Supplementary Reserve and the Territorial Army. In addition, a limited number of vacancies for the Indian Army may be available. Successful candidates, provided that they have attained the age of 21 years, will be appointed on or about the 29th January, 1937. In order to be eligible to sit for the examination, which will be the same as the passing-out examination for cadets at the Royal Military College (with additional papers for candidates for the Royal Artillery), candidates must—

(*a*) have reached the age of 20 years 6 months by the 1st January, 1937, and be under 25 years on 1st February, 1937;
(*b*) have completed 18 months' commissioned service in the Supplementary Reserve or the Territorial Army;
(*c*) have been attached to a unit of the Regular Army and have been recommended as a result of such attachment.

Full particulars of this method of entry to the Commissioned ranks of the Regular Army may be obtained from the Under-Secretary of State (S.D.3.a), The War Office, London, S.W.1.

Staff Colleges Entrance Examination.—An examination for entrance to the Staff Colleges at Camberley and Quetta will be held in February and March, 1937, for the courses beginning in January and February, 1938. There will be 61 vacancies for Camberley, of which 38 will be open to competition, the remainder being filled by nomination. The competitive vacancies will be allotted as follows: *British Army*: Cavalry, 1; R.A., 6; R.E., 3; Royal Signals, 1; Infantry, 12; R.T.C., 1; R.A.S.C., 1; *Royal Marines*, 1; *Indian Army*, 6; and Overseas Dominions, 6. Royal Navy and R.A.F. vacancies will be filled by nominees.

There will be 30 vacancies for Quetta (including 9 to be filled by nomination). The allotment of competitive vacancies will be: R.A., 2; R.E., 1; other arms, 15; Dominions, 3.

Promotion.—From 1st September, 1936, Lieutenants of Infantry Regiments will, in the absence of a vacancy, be promoted to Captain on completion of 13 years' service. This concession will benefit individual officers, who are badly placed, by

giving them increased pay, but unfortunately many of them will still be without companies to command and without proper opportunities of shouldering responsibilities at an early age. The system of promotion by a time scale, in the absence of a vacancy, is already in force in the R.A., R.E., Royal Signal Corps and the Indian Army.

JUBILEE OF THE DISTINGUISHED SERVICE ORDER.—The D.S.O., which was created by Queen Victoria on 6th September, 1886, has recently celebrated its Jubilee. The first appointments were made on 25th November, 1886, when about 40 awards were made for services in the Sudan and in Burma. Since its inception over 11,000 appointments have been made in the Order, and there have been over 800 awards of the Bar, which was instituted on 23rd August, 1916. Under the conditions now prescribed by the Statutes of the Order, only officers of the naval, marine, military and air forces of the Empire who have been specially mentioned in despatches for distinguished services under fire or under conditions equivalent to services in actual combat with the enemy are eligible for appointment.

RECRUITING PUBLICITY.—Faced with a serious shortage of men, the War Office has been making strenuous efforts to obtain more recruits for the Army. Publicity is generally recognized as being one of the most effective ways of improving this situation, and Bernard Advertising, Ltd., of York Buildings, Adelphi, have, it is understood, been commissioned to conduct a national campaign on behalf of the military authorities. Bernards have accordingly produced a brightly coloured pamphlet, about one million copies of which will be distributed in a personally canvassed, house to house recruiting drive. Local recruiting officers have been instructed to afford Messrs. Bernard the utmost support, and the results of this campaign are hopefully awaited.

SUPPLEMENTARY RESERVE.—The Secretary of State for War has announced the decision to form a new Infantry section of the Supplementary Reserve, with an initial establishment of 17,000. Enlistment will be for general service in the Infantry for six years, with an option of re-engagement for a further period of four years, and will be open to unmarried men between the ages of 18 and 25 years. Enlisted personnel will be required to do 26 weeks' training in the first year of their service, and 14 days' training annually thereafter. During their reserve service in peace they will be liable to be sent to any regular battalion for training: this is necessary to fit in with the movements of regular battalions, and also to give reservists a choice of suitable dates for their training. In the first year, 14 of the 26 weeks will be spent at the regimental depot, all subsequent training being with a regular battalion. On enlistment each man will receive a free issue of clothing, and during training periods he will receive full pay as for Regular Infantry of the Line, with, in addition, an annual bounty of £6 conditional on his carrying out the required annual training. Members of this section of the Supplementary Reserve will be permitted to enlist in the Regular Army at the age of 17½ years if they have completed their preliminary training.

MARRIED ACCOMMODATION.—The new flats built for the Army by Messrs. J. B. Edwards & Co., Ltd., of Piccadilly, at St. John's Wood, London, have attracted considerable attention, and a few notes regarding them may be of interest. The block, which will accommodate sixty-eight families, is situated in Queen's Terrace, and is a five-storied building. The flats, known as "Jubilee" Buildings, are of modern type and consist of varying numbers of rooms, which will allow for differences in the size of families. The equipment is up-to-date and includes gas cookers, fitted wardrobes (holding rifle racks in addition), bathroom, balcony, "pram" garages and rubbish chutes. In designing these flats the advice of soldiers' wives

was freely taken, and the results have been excellent. The rents, which have been kept as low as possible, are fixed at seven shillings per week.

Students of military history will be able to compare the present standard of accommodation with that provided for a married soldier in the "bad old days," when he was only allowed a corner of a single men's barrack, screened off by a part-worn blanket.

MARRIAGE ALLOWANCES.—The rates of marriage allowance issuable to soldiers on the Married Quarters Roll (including men of the Territorial Army and the Supplementary Reserve) have been under review, and the War Office has decided that, with effect from 1st October, 1936, the present rate of seven shillings per week for the wife shall be increased as follows in the case of such soldiers who are in receipt of pay at rates of or below four shillings per day :—

Rates of Pay.	Increase in Rate of Allowance.
s. d.	s. d.
3 8 or less a day	3 0 a week
3 9 a day	2 5 ,,
3 10 ,, ...	1 10 ,,
3 11 ,, ...	1 3 ,,
4 0 ,, ...	0 8 ,,

The rates for children remain unaltered.

ARMY VOCATIONAL TRAINING CENTRES.—The King has approved the design for a badge to be used by the Army Vocational Training Centres. The badge, which has been designed by the Garter Principal King of Arms and Inspector of Regimental Colours at the College of Arms, is described heraldically as: "Within a circle inscribed 'Army Vocational Training Centres' a cogwheel surmounted by a sword sheathed and a naked sword in saltire, the whole ensigned with the Royal Crest. On a scroll beneath the circle the motto 'Cedant Arma Togae.'" The cog-wheel represents industry; the naked sword is symbolical of serving soldiers; and the sheathed sword of soldiers who are about to return to civil life. The motto is a quotation from Cicero indicating that the soldier is exchanging a military for a civil career.

TRAINING.

GENERAL IRONSIDE'S REMARKS.—Owing to the despatch of the bulk of the 1st Division to Palestine, the manœuvres in the Sussex Area had to be curtailed. The 4th Division, however, before returning to barracks, held a tactical exercise without troops, which was attended by General Sir Edmund Ironside, G.O.C.-in-Chief, Eastern Command.

At the officers' conference, General Ironside gave his impressions of the training and emphasized certain points that needed attention. Army training, and especially infantry training, he remarked, had in recent years been severely handicapped in three ways: the first was lack of a clear picture of their future organization; the infantry had suffered the most, which helped to explain why the training of the other arms was relatively better. The second was the desire for 100 per cent. perfection in material, which hindered the issue of modern equipment; it would, he averred, have been better to be content with 50 per cent. perfection so that they might have something with which to train and to build up a tactical doctrine. The third was lack of men; there was ground for hope that their needs would be met before long, and meantime he counselled patience. He also urged the importance of preserving war experience as a practical guide and passing on the lessons to the rising generation of soldiers.

As regards the first point made by General Ironside, readers will remember that the new composition of the infantry brigade was given in a War Office Communiqué, published in Army Notes for the February, 1936, JOURNAL. The Brigade would in future, the Communiqué stated, be composed of three " rifle " battalions and one " support " (or machine-gun) battalion. Steps were to be taken at once to create the necessary number of machine-gun battalions and to have them " in being " by the spring of 1937. This organization has, however, again been brought under review, and it is understood that important modifications are to be made. An unofficial outline of the new organization has appeared in the Press; but we are informed that details have not yet been finally approved.

TANK TRAINING.—The annual training of the 1st Tank Brigade (Brigadier P. C. S. Hobart, D.S.O., O.B.E., M.C.) took place this year, in September, on Salisbury Plain. In the absence of the 1st (Light) Battalion overseas, the Brigade consisted of 2nd, 3rd and 5th Battalions, Royal Tank Corps. Training was carried on under difficulties, as, apart from being one battalion short, the remaining units were undermanned and the tanks, of which they are composed, over-aged and liable to mechanical breakdowns. Owing to the despatch overseas of much of the wireless equipment, the brigade had chiefly to rely on visual signalling, which, with such relatively fast-moving units, imposes severe limitations on flexibility of manœuvre. In some cases tanks were represented by motor trucks, which, of course, have not the same cross-country performance.

In these circumstances, the Tank Brigade can only be regarded as a nucleus whose chief purpose at the moment is the training of personnel. Officers and men, though labouring under a heavy handicap, have retained their enthusiasm and are conscious that better days are at hand.

C.I.G.S.'s REMARKS.—The training was visited by Field-Marshal Sir Cyril Deverell, Chief of the Imperial General Staff, who, in an interview with the Military Correspondent of the *Morning Post*, stated how impressed he was with the spirit and eagerness to maintain efficiency shown by all ranks in spite of the absence of up-to-date equipment.

" The Army Council," he declared, " appreciate fully the disabilities under which the Tank Brigade is training, and so does the Government. But the mere waving of a wand will not change matters. Years of neglect are responsible for the existing state of affairs. Years of hard, unceasing work are before us if we are to place the Tank Brigade where it should be in the scheme of defence.

" In a few years from now I hope to see the Tank Brigade re-equipped with modern machines giving a performance superior to those now in use. Rearmament must be a gradual process. For a time we cannot expect more than a trickle of new arms and vehicles.

" I anticipate that it will not be very long before our Army will have reached again the standard required of it. A serious lag is bound to take place in production when design and experiment have been satisfactorily passed, because in this country comparatively little has been done to maintain sufficient skilled workers or provide the machines which are essential to production on a reasonable scale."

In conclusion, Sir Cyril said : " The responsibility is great. It has been accepted. I am confident that you will soon see an improvement which we who are interested in preparing adequately for the defence of the country and for the future of the Army so ardently desire. It is important that soldiers of all ranks should know that there is a definite move in the right direction."

TERRITORIAL ARMY

RECRUITING.—The latest returns show that during the month of September, 1936, 1,556 recruits were taken on the strength, compared with 765 during August last and 656 in September, 1935. During the six months April to September, 1936, the intake of recruits was 21,638 as compared with 13,282 during the same period last year, an increase of 62.9 per cent.

On 1st October, 1936, the strength of the Territorial Army (other ranks) was 132,296, and the deficit 40,443. The number of officers of the Territorial Army on 1st October, 1936, was 7,730; this is an increase of 20 during the month, and 516 more than on 1st October, 1935. The number of officers is, however, 1,842 short of establishment.

The strength of the 1st Anti-Aircraft Division (e.g. the air defence units in London and the surrounding districts) was 509 officers and 6,353 other ranks, as compared with 508 officers and 6,248 other ranks on 1st September, 1936. 174 recruits joined the Division during the month, and the strength is at present 9,89 short of establishment.

Mr. Duff Cooper, Secretary of State for War, at a dinner given by the British Commercial Gas Association at Bath, paid a tribute to the Gas Light and Coke Company and to its Managing Director, Sir David Milne Watson, Honorary Colonel, 12th London Regiment (Rangers), for raising a Territorial battalion. It was an example which he hoped would be speedily followed by other industries in the country. "For," he declared, "the prospect of Europe and the world to-day is one to terrify the stoutest heart."

Lord Derby, Lord Lieutenant of Lancashire, speaking at Liverpool, also made a strong appeal for more recruits. "It was at my own home at Knowsley," he said, "that the idea of the Territorial Army was first mentioned by Lord Haldane, then Secretary of State for War."

FINANCE.—The Stationery Office has issued a statement for 1935–36, showing the financial position of the Territorial County Associations. Fifty-one Associations incurred a loss, and thirty-four showed a profit. The net amount of the general reserve funds of all Associations was £482,500 compared with £492,000 last year.

NATIONAL DEFENCE COMPANIES.—The Royal Defence Corps has been replaced by National Defence Companies, Territorial Army. This change was decided upon as it was felt that the Royal Defence Corps was not sufficiently identified with the Territorial Army, which is responsible for Home Defence, and interest was shown to be lacking, to some extent, in a force which had no direct connection with Territorial Army units. The role of the new National Defence Companies will be to protect important points in Great Britain on the threat of, and during, war only. Officers and other ranks will consist of ex-members of His Majesty's forces between the ages of 45 and 60 years, though personnel under 45 may be taken if unfit for service of a more active nature than guard duties. They will be enrolled in peace as being willing to be commissioned, or enlisted, for home service in the local National Defence Company, as and when required. They will not, however, be called up for service until the guarding of the important points becomes necessary, neither will they be called up on account of civil disturbance. As far as possible, they will be employed on guard duties in the neighbourhood of their homes. Enrolment will be for an indefinite period, terminable at one month's notice on either side, or when members of the Companies reach the age of 60 years, or become unfit for duty. It is particularly hoped that all personnel who joined the Royal Defence Corps will accept the new conditions and re-enrol. National Defence

Companies will be formed on a county basis, or, in certain cases, on a city basis, and each will be linked with a Territorial Army infantry battalion and so shown in the Army List. Enrolled personnel will be permitted to attend parades of the Territorial Army unit with which they are enrolled, and to become members of its clubs, at the discretion of Commanding Officers. Specially designed badges will be issued to personnel enrolled.

A total of approximately 8,450 officers and men, distributed among the various counties in Great Britain, will be required for enrolment.

THE KING'S CUP.—The 363rd Battery, 91st (4th London) Field Brigade, R.A., won the King's Cup for Field, Horse and Medium Artillery on 26th September, 1936, at Larkhill. The battery is commanded by Major C. W. Wright, M.C., M.M., and is recruited from the Lewisham, Deptford and Charlton areas. The men, who are mostly very young, work chiefly as shop assistants and junior clerks, and there are only one or two N.C.Os with war service. General Sir Walter Kirke, Director-General of the Territorial Army, who witnessed the competition, expressed his high satisfaction and declared that the drill was little short of professional standards.

THE KING'S PRIZE.—The 176th Suffolk Heavy Battery, R.A., won the King's Prize for 9.2 in. batteries, shot for on 14th September, at Plymouth. The unit is commanded by Major J. H. Allen, M.C., T.D., and comes from Dovercourt. In addition to the King's Prize, the winners received the Corporation of the City of London prize, the Haberdashers' Company's prize and the National Artillery Association's prize. The Battery Commander was awarded the cup given by Major Sir William Dupree, Bart., Chairman of the Portsmouth and Brighton United Breweries, Ltd.

THE KING'S CUP FOR 6-IN. GUNS.—The 166th Suffolk Heavy Battery R.A. won the King's Cup for 6-in. guns, on 15th September, at Plymouth. The battery is commanded by Major G. P. Ridley and is recruited from Ipswich. This is the first occasion in the 70 years, during which the competitions have been held, that the same brigade has won both the King's Prize and the King's Cup, and is a personal triumph for Lieutenant-Colonel H. M. A. Ward, D.S.O., O.B.E., T.D., the Brigade Commander. When Major-General F. W. Barron, C.B., O.B.E., Inspector of Fixed Defences, announced the " double event " the men greeted the news with loud and prolonged cheering.

HONOURABLE ARTILLERY COMPANY.—The H.A.C. will celebrate next year the 400th anniversary of its foundation. On 10th July there will be a regimental garden party and pageant at Headquarters, Armoury House, Finsbury. A detachment of the Ancient and Honourable Artillery Company of Massachusetts, which was formed in 1638 by members who had emigrated to America, will attend the celebrations. The H.A.C. claims to be the oldest regiment in the British Army. The actual date of its origin is unknown, but Henry VIII granted a Charter of Incorporation in 1537 to an existing body of citizen archers known as " the Fraternity or Guild of St. George," endowing them with certain privileges and commanding them to practise " the science and feat of shooting " with longbow, crossbow and hand gun.

The unit consists to-day of A and B Batteries R.A., and the infantry battalion. King James II was the first Captain-General of the Corps, and His Majesty King Edward VIII was pleased to assume this appointment on his accession to the throne.

INDIA

STAFF COLLEGE, QUETTA.—The Government of India have decided to bring the Staff College more up-to-date in the matter of air instruction and to appoint a Wing Commander, R.A.F., as Air Instructor. This will bring Quetta into line with Camberley, where this appointment has existed for some time. It is not to be supposed that, prior to this appointment, officer students at Quetta did not receive air instruction, but the system was admittedly imperfect. The senior R.A.F. student at the College—often a Squadron Leader—acted in a dual capacity as a student of Army administration and an instructor (or adviser) in Aerial Strategy. The reason for this was chiefly financial and, with the general improvement in the monetary situation, no longer carries the same weight.

TINNED FOOD IN INDIA.—The Commander-in-Chief in India has issued an order to all ranks calling attention to the results of analysis of certain tinned goods of foreign manufacture, which shows that these are of inferior quality, containing in some cases dangerous ingredients. Tinned goods required for ration issues, hospitals, or messing are to be only those of recognized brands of British Empire manufacture. The sale in institutes of any other brands of tinned goods is forbidden. This measure—besides safeguarding the health of the troops—will contribute towards the improvement of Empire trade.

FOREIGN

FRANCE

DEFENCE MEASURES.—France has decided to meet the challenge implied in the German extension of the period of military service, not by calling up more men or by keeping them longer with the Colours, but by an important expansion of her material resources. Mons. Daladier, Minister for Defence, and Mons. Cot, Air Minister, have announced a defence programme of which the following are the main points: the *Maginot* line is to be extended and given increased depth; specialist units of long-service personnel are to be formed for the armoured divisions and for the Air Force; the numbers of mechanized divisions are to be increased and their equipment modernized; more and faster bombing machines are to be built. The cost of these measures will be £40,000,000 for this year.

The decision to oppose an increase in man-power by a reinforcement of material bears the stamp of scientific thought and is in accordance with the most advanced school of military opinion.

MOTOR CYCLE UNITS.—Captain Grosjean has written a thoughtful article in the *Revue de Cavalerie* on the subject of motor cycles in war. He has given detailed consideration to their special characteristics, as these will naturally govern their probable uses in the field. The motor cycle, he affirms, possesses high mobility and wide radius of action. Its speed is at least equal to that of an armoured car, and its weight is far less, enabling it to cross marshy ground and light foot-bridges or narrow causeways where no car could venture. It is inclined to be noisy, but not more so than a car. This defect can, however, be cured, he declares, by the adoption of twin engines and by an adequate silencer. The visibility from the driver's seat is not very high, but it is not worse than that of an armoured car, where the crew's view is restricted to the loopholes in the armour. Owing to lack of protection, the motor cycle is very vulnerable to small-arms fire. It is, however, small and is easily hidden in a fold in the ground, or in a bush or hedge. From the air it offers

a difficult and unconspicuous target, especially when at rest. Compared with a car, its purchase price is low and its running costs negligible.

Its wide use in civilian circles makes ample numbers available on mobilization. Captain Grosjean recommends a crew of two men (one driver and one gunner), who would be interchangeable. A sidecar would be attached for the carriage of a light automatic with its ammunition, and for the rations and greatcoats of the crew. The light automatic weapon would normally be used dismounted, at a short distance from the motor cycle, but arrangements could easily be made to mount the weapon on a semi-circular "scarf" mounting, fixed to the machine and allowing for a wide radius of fire, especially in a rearward direction. Fifty per cent. of side cars should be fixed to the right side and fifty per cent. to the left side of machines, thus enabling a pair of motor cycles to afford each other mutual support from their light automatics. A group of two machines would thus form a tactical sub-unit.

In conclusion, after surveying their characteristics, the author turns to the question of their employment in the field. The rapid transport of light automatic weapons to a threatened point or to forestall the enemy at some tactical feature is an obvious role. Motor cycles would, moreover, be invaluable for medium reconnaissance and for screening the manœuvres of a mechanized or armoured force.

GERMANY

Shortly after the re-occupation of the Rhineland by the German military forces in March, 1936, it was announced that the new Rhineland military command would be incorporated in the Corps Districts of Muenster, Cassel and Stuttgart (see the article entitled *The Rebirth of the German Army* in the JOURNAL for August, 1936), and that no new Corps would be created. The Muenster district comprises the Rhine sector running from the Dutch frontier to Bonn, and includes the northern Eifel hills up to the Belgian frontier at Montjoie. The Cassel command takes in the Rhine from Bonn to the South of Worms. Its forward area includes the southern Eifel, the Hunsrueck and the Saar, thus covering the Belgian frontier from Montjoie southwards to its junction with Luxembourg and the French frontier along the Saar. The eastern area of this district includes Hesse and Frankfort on the Main. The 9th Corps area takes in the remainder of the Rhine opposite Alsace to the Franco-German–Swiss frontier near Basle.

After this reorganization a period of calm as regards military matters set in, and there was no news of importance until 24th August, 1936, when Herr Hitler and General Von Blomberg startled the world by a sudden announcement of the extension of the period of military service. The decree ran as follows:—"With reference to paragraph 8 of the Army Law of May 21st, 1935, I order, along with the removal of my decree of May 22nd, 1935, the following: the period of active military service in the three divisions of the armed forces is uniformly fixed for two years. The Reich War Minister and Commander-in-Chief of the army is issuing the required orders for carrying this out."—(*Signed*) ADOLF HITLER, VON BLOMBERG.

According to the German Press, this decree is an answer to the recent Soviet measure lowering the age of conscription from 21 to 19 years. "The military menace of Soviet Imperialism" is officially given in Germany as the reason for the increase, though how this can really be so is difficult to understand. Between Germany and the U.S.S.R. lie the territories of Lithuania, Poland, Czecho-Slovakia and Roumania, and at no point do their mutual frontiers touch. How then—excluding the air arm—are they to attack each other? This would only be possible by first invading some neutral country and then marching through it towards

the main objective. Lithuania would be merely a " snack "—not even a mouthful—for either Germany or the U.S.S.R., but the country is so cramped that it does not afford space for the deployment of a Group of Armies. Poland is a different matter. The invasion of this country—defended by a first-class army—would be for either Russia or Germany a war of the first magnitude. The Polish Army acting on the defensive would probably invoke the assistance of either Power against the other, and a long drawn out and indecisive struggle might be anticipated.

Much " play " has been made in the Press about the possible use of Czecho-Slovakian aerodromes by the aircraft of the U.S.S.R. This seems to be merely a " bogy-man." If the Czechs were so unwise as to permit this manœuvre, they might be immediately invaded and broken up by the German Army, whose full power they are not in a position to withstand without strong outside help. How then is the U.S.S.R. to afford such assistance ? Southern Poland lies between the U.S.S.R. and Czecho-Slovakia, and Russian troops and aircraft in order to reach Prague would have to violate Polish neutrality. The Poles are the last people in the world to allow this, and the fate of the Czechs, lying between the upper and nether mill-stones of Poland and Germany, would inevitably be sealed.

The truth is probably that the Germans are temporarily short of men. They—like France—have now entered the period when, owing to war losses, the numbers of conscripts coming forward are only about three-fifths of the normal annual quotas. This situation will cause a temporary weakness until 1939–40, when the curve of potential soldiers will again rise steeply. The prolongation of the period of military service will enable Germany to tide over this period of weakness and to increase the number of men actually serving with the Colours, while the " menace of Soviet Russia " will serve as a pretext to whip up enthusiasm, which is reported to be on the wane.

The young middle-class German, who aspires to be a doctor or lawyer, has to serve such a prolonged period of labour and army training (six months labour, two years military) in addition to his five–six-year university and professional instruction, that he will rarely be able to marry before reaching the age of thirty. In pre-war days the university student was not called upon for labour service, and received the important concession of only one year's liability for military training. Early marriage has long been the custom in Germany, and whether this further interference with the habits of the people will be popular remains to be seen.

The new list of the German Army Commands has lately been issued in the official gazette. Two more Army Corps have been constituted, thus bringing the total up to the twelve authorized in the Defence Law of March, 1935. Lieutenant-General Ulex is appointed to the command of the 11th Corps, with Headquarters at Hanover, and Lieutenant-General Kress von Kressenstein, our old opponent in Palestine, to the 12th Corps at Coblenz. Both are promoted to the rank of General.

Hanover was previously included in the 9th Corps area, and was Headquarters of the 19th Division. The new organization will, therefore, entail a redistribution of areas as between the 9th and 11th Corps. These measures prove that the completion of the Army to its authorized strength of thirty-six divisions is in sight.

The formation of three armoured Divisions—of unspecified strength and composition—is also announced ; these are believed to be located at Weimar, Berlin and Wurzburg.

AIR NOTES

ROYAL AIR FORCE

Honours and Awards.

Mohmand Operations 1935.—His Majesty the King has been graciously pleased to command that the India General Service Medal, bearing on the obverse the Crowned Effigy of His late Majesty King George V, with clasp "North-West Frontier, 1935," shall be granted, provided the claims are approved by the Air Council, to the personnel of the Royal Air Force who took part in the operations against the Mohmands on the North-West Frontier of India, between midnight 15th–16th August to midnight 15th–16th October, 1935.

The medal and clasp will be granted to officers and airmen :—

(*a*) who were on the strength of, or attached to, No. 20 (Army Co-operation) Squadron and who served within the following geographical limits :—

Working from the East, down the Swat River to the Administrative Border ; thence South-West along the Administrative Border, including Kilagai Camp, to the Kabul River ; thence along the Kabul River.

(*b*) who were attached to, and who actually served as officers or airmen with the Royal Air Force units which engaged in the operations and operated from Peshawar, Risalpur and Kohat.

Individuals previously awarded the medal will receive the clasp only.

Appointments.

The following appointments have taken effect as from the dates shown :—

Air Marshals.—Sir Arthur M. Longmore, K.C.B., D.S.O., as Commandant of the Imperial Defence College, to date 1st September, 1936 ; P. B. Joubert de la Ferté, C.B., C.M.G., D.S.O., to Headquarters, Coastal Command, as Air Officer Commanding-in-Chief, to date 1st September, 1936.

Air Vice-Marshal.—E. L. Gossage, D.S.O., M.C., to No. 11 (Fighter) Group, as Air Officer Commanding, to date 7th September, 1936.

Air Commodores.—D. C. S. Evill, D.S.C., A.F.C., to Headquarters, Bomber Command, as Senior Air Staff Officer, to date 10th September, 1936 ; A. G. Garrod, O.B.E., M.C., D.F.C., to Headquarters, No. 23 (Training) Group, as Senior Air Staff Officer, to date 10th July, 1936 ; C. W. H. Pulford, O.B.E., A.F.C., as Superintendent of Reserve and Inspector of Civil Flying Training Schools, to date 21st September, 1936.

Air Attache.—Wing Commander H. S. Kerby, D.S.C., A.F.C., has been appointed to succeed Group Captain R. P. Willock as Air Attaché to His Majesty's Embassy at Peking.

IMPERIAL DEFENCE COLLEGE.—The following officers have been selected for the next course at the Imperial Defence College, commencing in January, 1937 :—

Group Captains K. R. Park, M.C., D.F.C., and R. P. Willock.
Wing Commanders J. O. Andrews, D.S.O., M.C.; A. H. Orlebar, A.F.C.; and A. L. Fiddament, D.F.C.
Squadron Leader A. B. Elwood, D.S.C.

UNIVERSITY CANDIDATES.—Eleven University candidates have been selected for appointment to permanent commissions in the General Duties Branch of the Royal Air Force—six from Cambridge ; three from Oxford ; and two from London.

ATTACHMENT OF FOREIGN OFFICERS.—Flying Officer Anilinne of the Estonian Air Force was attached to the Central Flying School for a three weeks' course on Anson aircraft from the 5th September.

Lieutenant Maraskara of the Siamese Air Force has been attached to the Home Aircraft Depot, Henlow, from 10th September, for the second year of the Engineering Course.

ROYAL AIR FORCE EXPANSION.

NEW UNITS AND STATIONS.—The formation of the eight new squadrons, details of which are given under the heading " Organization," brings the present strength of the Metropolitan Air Force up to 79 Squadrons with a first-line establishment of 974 aircraft, as compared with 53 squadrons and 580 aircraft prior to the 1935 expansion programme. The ultimate strength of the Metropolitan force, as envisaged in the 1935 programme and the additional programme of 1936, is to be 129 squadrons (109 regular and 20 non-regular) with a first-line establishment of 1750 aircraft. Increases are also scheduled to take place in the Air Force overseas and in the Fleet Air Arm.

Of approximately 50 additional stations which it was estimated would be required under the Expansion Schemes, 40 sites have actually been acquired to date. During the three months under review, new stations at Finningley and Driffield (Yorks), Wyton (Hunts), and Scampton (Lincs) have been opened, and headquarters are forming in the near future at Dishforth and Leconfield (Yorks), Odiham (Hants), Hemswell (Lincs), Upwood (Hunts), and Feltwell (Norfolk). In addition, the Armament Training Camps being established at Penrhos (Carnarvon) and West Freugh (Wigtownshire) with their ranges at Hell's Mouth and Luce Bay, are expected to be in operation from the commencement of 1937. Constructional work on other stations is actively progressing, and pending their completion certain newly-formed squadrons will be temporarily accommodated at existing stations.

PERSONNEL.—Personnel required by April, 1937, to give effect to the 1935 Expansion Scheme was estimated at approximately 2,500 pilots and 20,000 airmen. As regards pilots, 500 have been obtained from inside the Service—a normal procedure—and practically the whole of the 2,000 to be obtained from civil life have already been accepted. To meet the requirements of the further expansion during 1937 and 1938, and the increase in the normal intake consequent upon the number of additional squadrons being formed, the need for further pilots will, however, continue and applications from suitable candidates will still be welcomed.

In the case of airmen, the total numbers obtained to date exceed 17,000. The majority of those needed for entry to complete requirements during the current year are aircraft hands, and approximately 500 are required monthly—150 for

training as armourers and wireless operators, and 300 for general duties as aircraft hands. Vacancies also exist in the Fitter Trades Group, and suitable applicants at the rate of 50 (or more) each month can be accepted.

Apprentices and boys are now being entered in larger numbers than heretofore, and 1,000 are required for entry into the Service at the beginning of 1937.

The provision of reserves of personnel is an essential and important part of the expansion programme, and will be provided through the two following schemes :—

(i) *The Volunteer Reserve*, details of which were given in last quarter's Notes, and in which 800 vacancies will occur annually.

(ii) *The One Year Training Scheme*, particulars of which will be found under "R.A.F. Reserve of Pilots" in these Notes, and for which 100 candidates are required immediately, with a further 100 at the end of the year.

AIRCRAFT.—In addition to the increased numbers of existing types of aircraft previously ordered, production orders have been placed with the manufacturers for many new types of bomber and fighter aircraft.

To assist in the supply of the large numbers of aircraft and engines required by 1939 for reserve purposes and for augmenting ordinary industrial supplies in time of war emergency, arrangements have been made to establish a "shadow" aircraft and aero engine industry. To this end certain firms in the motor industry are erecting factories on Government account, and will obtain valuable educational experience in the production of airframes and aero engines for the reserve. After supplying these needs, the factories will not be required to function further until a real war emergency develops. They will therefore be closed down but will be kept on a well maintained basis ready to be put into operation at short notice.

ORGANIZATION.

NEW SQUADRONS.—Formation of eight new squadrons commenced at the stations and on the dates shown hereunder :—

Squadron.	*Station.*	*Date.*
No. 46 (Fighter)	Kenley	3/9/36
,, 66 (Fighter)	Duxford	20/7/36
,, 83 (Bomber)	Turnhouse	4/8/36
,, 103 (Bomber)	Andover	10/8/36
,, 107 (Bomber)	Andover	10/8/36
,, 139 (Bomber)	Wyton	3/9/36
,, 151 (Fighter)	North Weald	4/8/36
,, 220 (G.R.)	Bircham Newton	17/8/36

Nos. 46, 66 and 151 (F.) Squadrons will form part of the Fighter Command in No. 11 (Fighter) Group.

Nos. 103 and 107 (B.) Squadrons are being equipped with light bomber type of aircraft and will form part of the Bomber Command in No. 1 (Bomber) Group.

No. 83 (B.) Squadron is also being equipped with light bomber type of aircraft and will form part of the Bomber Command in No. 2 (Bomber) Group.

No. 139 (B.) Squadron is being equipped with medium bomber type of aircraft and will form part of the Bomber Command in No. 3 (Bomber) Group.

No. 220 (General Reconnaissance) Squadron will form part of the Coastal Command.

Home Commands.

Air Officers Commanding-in-Chief.—With effect from 14th July, the Air Officers Commanding the Bomber, Fighter, Coastal, and Training Commands assumed the title and status of Air Officers Commanding-in-Chief.

Air Defence Exercise, 1936.—The operations were on a much smaller scale than in previous years, partly due to the fact that a large number of squadrons were at the time stationed temporarily overseas, and partly due to the reorganization of the R.A.F. consequent upon the Expansion Scheme, but, although about half the number of aircraft as compared with the 1935 Exercise was engaged, the opportunity was taken of employing a larger number of anti-aircraft units. This year there were no targets in London itself, the objectives of the raiding squadrons being certain R.A.F. stations on the eastern side of the metropolis.

Armament Officers' Bombing Trophy, 1936.—The R.A.F. Armament Officers' Bombing Trophy, presented for competition by the officers attending the long armament course in 1930, has this year been won by No. 57 (Bomber) Squadron, stationed at Upper Heyford. The trophy is competed for annually by light and medium bomber squadrons of the Metropolitan Air Force, and is awarded to the squadron obtaining collectively the highest degree of accuracy in a bombing classification exercise under conditions laid down by the Air Officer Commanding-in-Chief, Bomber Command. The exercise includes various methods of bombing attack on unfamiliar targets, situated at a considerable distance from the home station.

Since the inception of the competition there has been each year a steady improvement in the assessment figures obtained by squadrons, and the improved results obtained by No. 57 (Bomber) Squadron this year are all the more creditable in view of the difficulties imposed by the Expansion scheme during 1936 upon continuity of training. The trophy is held by the winning squadron for one year.

Passing-Out Inspections.

(*a*) The Passing-Out Inspection of Flight Cadets from the R.A.F. College, Cranwell, took place on 31st July, and was carried out by Marshal of the Royal Air Force the Viscount Trenchard, G.C.B., G.C.V.O., D.S.O., D.C.L., LL.D.; 28 Flight Cadets being passed out.

His Majesty the King's Medal, presented to the Flight Cadet who obtains the highest aggregate of marks in all subjects in the final order of merit following the passing-out examinations, was awarded to Flight Cadet D. A. Kerr, who thus won for " A " Squadron the Sir Thomas Berridge Cup.

The Sword of Honour, presented to the best all-round Flight Cadet in the Senior Term, was awarded to Flight Cadet Under-Officer P. B. Chamberlain.

The Air Ministry prize, awarded to the Flight Cadet in the Senior Term obtaining the highest marks in English and History was won by Flight Cadet Sergeant V. C. Darling.

The Air Ministry prize, awarded to the Flight Cadet in the Senior Term obtaining the highest marks in Aeronautical Engineering, was won by Flight Cadet Sergeant V. C. Darling.

The Abdy Gerrard Fellowes Memorial Prize, for the Flight Cadet obtaining the highest marks in Mathematics and Science, was awarded to Flight Cadet D. A. Kerr.

The J. A. Chance Memorial Prize, for the Flight Cadet in the Senior Term obtaining the highest marks in Service Subjects, was awarded to Flight Cadet G. Burges.

(*b*) The Passing-Out Inspection of Aircraft Apprentices from No. 1 School of Technical Training (Apprentices), Halton, was carried out by Air Vice-Marshal W. R. Freeman, C.B., D.S.O., M.C., Air Member of Council for Research and Development, on 28th July, 1936. 171 Aircraft Apprentices were passed out. Four Apprentices were awarded Cadetships.

(*c*) The Passing-Out Inspection of Aircraft Apprentices from the Electrical and Wireless School, Cranwell, was carried out by Air Vice-Marshal J. E. A. Baldwin, D.S.O., O.B.E., Director of Personal Services, Air Ministry, on 29th July, 1936. Fifty-seven Aircraft Apprentices were passed out; two were awarded Cadetships.

DEPARTURE OF FLYING BOAT SQUADRON FOR FAR EAST.—No. 230 (F.B.) Squadron, which is being added to the establishment of the Far East Command, is being flown from England to Singapore by squadron personnel under the command of Wing Commander W. H. Dunn, D.S.C. The squadron, equipped with five Short "Singapore III" flying boats, left Pembroke Dock on the 14th October, and the flight is proceeding via Mount Batten, Berre, Malta, Aboukir, Lake Habaniyah (Iraq), Basrah, Ras al Khaimah, Karachi, Allahabad, Calcutta, and Mergui to Singapore, where the squadron is due to arrive early in November.

The total distance to be flown exceeds 8,000 miles, the longest stage being from Malta to Aboukir, a distance of 920 miles.

GENERAL.

NEW ALTITUDE RECORD ESTABLISHED.—On 28th September, 1936, Squadron Leader F. R. D. Swain, of the Experimental Section, Royal Aircraft Establishment, Farnborough, Hants, piloting a specially designed aircraft—the "Bristol 138," fitted with a special "Pegasus" engine—reached a height of 49,967 feet (15,230 metres), thus establishing a new world altitude record, subject to acceptance by the *Fedération Aeronautique Internationale*, to which application for homologation of the record has duly been made.

The following message was received by the Secretary of State for Air from Balmoral Castle:—

> "The King will be glad if the Secretary of State will convey to Squadron Leader Swain His Majesty's congratulations on his fine achievement in breaking the altitude record with all-British equipment.—HARDINGE."

PROMOTION OF OFFICERS ENTERED UNDER THE UNIVERSITY CANDIDATES SCHEME.—With reference to A.M.O. A.88/36, which reduces the period of Flying Officer service qualifying for time promotion to Flight Lieutenant to two years, with effect from 1st October, 1936, it has been decided that, whilst this provision is in operation an officer promoted to Flying Officer with an antedate as provided in K.R. & A.C.I., para. 351, clause 2, shall be required to complete two years Flying Officer service from the effective date of his promotion to that rank before he becomes eligible for promotion to the rank of Flight Lieutenant.

On promotion to Flight Lieutenant he will receive an antedate of seniority equal to that received on promotion to Flying Officer, except that such seniority will not be dated with effect prior to 1st October, 1936. This antedate will not entitle him to pay at the Flight Lieutenant rate before the effective date of promotion to that rank.

NOMENCLATURE OF AIRCRAFT.—The name of the Hawker single-seater fighter aeroplane fitted with Merlin engine is Hurricane I.

The name of the Vickers medium bomber aeroplane fitted with two Pegasus engines is Wellington I.

ARMY CO-OPERATION

BRIGADE AND DIVISIONAL TRAINING.—Owing to the absence of the 5th Division from Northern Command, No. 26 (A.C.) Squadron's combined training was confined this year to two Brigade Exercises of an elementary nature.

The remaining four Army Co-operation Squadrons co-operated in Brigade and Divisional training during August and September. This training was curtailed (owing to the departure of the 1st Division for Palestine) prior to the 1st Divisional Exercise, which was to have taken place 14th to 19th September.

Nos. 18 and 57 (Bomber) Squadrons and No. 1 (Fighter) Squadron were made available to take part in the Aldershot Command Divisional Exercises this year. The allotment of these squadrons to operate under command of divisions is abnormal, but by employing them to attack troops when observed, it was hoped to bring home any failures in concealment by the forces on the ground. It also afforded opportunity for training the Squadrons in reconnaissance work.

ARTILLERY PRACTICE CAMPS.—Artillery Co-operation at Artillery Practice Camps was provided at Larkhill, Okehampton, West Down, and Redesdale.

No. 16 (A.C.) Squadron and a flight of No. 13 (A.C.) Squadron co-operated in the Southern Command Combined Operations Exercise from 25th to 29th August. No. 16 (A.C.) Squadron was allotted to co-operate with the landing force and, in addition to carrying out normal Army Co-operation work, the squadron was called upon to direct naval gunfire from H.M.S. " Iron Duke " during the course of operations.

Demonstrations were given to nearly all the O.T.C. units in camp.

R.A.F. RESERVE OF PILOTS

In order to increase the present reserve of fully trained pilots to meet the requirements of the expanded Royal Air Force, a special category of a limited number of reserve pilots will be established in the near future. These reserve pilots on entry will pass through the same full course of training as that attended by pilots of the regular Air Force, lasting for approximately twelve months. They will be trained on elementary and service types of aircraft at civil and service flying training schools. Whilst training at civil schools they will serve under conditions as regards emoluments, leave, etc. similar to those for pupils under training for commissions in the regular Air Force.

On proceeding to a R.A.F. Depot when the civil school training is complete, reserve pilots will be appointed to the acting rank of Pilot Officer (on probation) and will be eligible for confirmation in rank after twelve months' service. Whilst at the R.A.F. Depot and during subsequent service at flying training schools they will receive the emoluments appropriate to their rank. On completion of their period of training, reserve pilots will revert to civil life to complete their reserve service.

The scheme is designed to appeal to young men who can spare the twelve months required for training before embarking upon a career, and who are able to make satisfactory arrangements regarding their re-employment in civil life after completion of the course of training. In this respect this scheme differs from the scheme for the raising of the R.A.F. Volunteer Reserve, details of which were given in last

quarter's JOURNAL. The latter scheme is primarily designed to provide less intensive training under conditions which will permit the entry of the candiates in large numbers without interruption of their civil occupations.

Selected candidates under the one-year training scheme will be appointed to commissions in class A of the Reserve of Air Force Officers for a period of five years service, and, in addition to attending the initial course of training in their first year of service, they will be liable to attend for not more than 24 days annual training in subsequent years. They will receive a retaining fee of £25 a year for each year after the first.

Candidates must be between their eighteenth and twenty-fifth birthdays and must be approximately of the educational standard required for the School Certificate of the Oxford and Cambridge Schools Examination Board. They must be able to give twelve months continuous whole-time attendance for training.

OVERSEAS COMMANDS

ADEN

UNREST IN LOWER AULAQI COUNTRY.—For some considerable time the Ahl Mansur section of the Lower Aulaqi tribe, who live in a valley called the Wadi Maris, about 150 miles North-East of Aden (on the main trade route from Ahwar to Yeshbum) have been inclined to display a somewhat truculent attitude when subjected to authority. This culminated in an incident at the end of June, when Sheikh Muqbil Salim and four Aqils of the section concerned refused to provide an escort for a Government official to pass through their country. As a result a Political Officer was flown to Nisab on 17th July with letters to the offending Aqils ordering them to come to Yeshbum on the 27th to meet him for the purpose of explaining their conduct. Similar letters were dropped on the villages of the Aqils concerned. On the 22nd July a demonstration by twenty-three aircraft of Nos. 8, 12 and 41 Squadrons was carried out over their country, and the country has since been visited frequently by aircraft.

Only one of the five Aqils concerned, Muqbil Salim, met the Political Officer at Yeshbum. He stated that he had no control over the others and that the reason for their refusing an escort for the Government Official was the fear of his being attacked, it being considered better in the circumstances that he should not go through the country. Whether or not there was any truth in this statement, local reports indicated that the remaining tribesmen were definitely opposed to authority. It is not known what influence Muqbil Salim has over them, but as his explanation of the incident was regarded as unsatisfactory an ultimatum was sent to the offenders ordering them to pay a fine of rifles and money by 10th August, failing which their villages would be blockaded until they submitted.

The fine was not forthcoming by the due date. Following upon the customary forty-eight hours warning notices, an air blockade of the tribal territory and villages concerned, was instituted on 13th August. After a brief period of seven days the Aqils submitted to this pressure, paying the fines in full on 21st August, the blockade being lifted on that date.

The political authorities consider that the results of this air action has had a salutary effect over a widespread area in the remote sections of the Protectorate to the North-East of Aden.

FOREIGN

AUSTRIA

PARACHUTE TRAINING.—A special section of the Austrian Aero Club has been inaugurated to train parachute-jumpers. Members of this group have been practising parachute descents with machine guns, the gun being thrown overboard with its own parachute and the crew following immediately after. It is reported in the Press that one Josef Eschner has invented a parachute which enables the jumper to descend with his machine gun, and even to fire it during the descent. A demonstration of this parachute is expected to be given in the near future.

BULGARIA

GOVERNMENT SUPPORT FOR AVIATION.—Colonel Popvasilieff, the Director of Aviation, has announced that the Bulgarian Government intends to expand propaganda for aviation. The two existing societies—the " Rodna Aviatsia " and the " Aeroclub "—are to be amalgamated to form the Bulgarian Aviation Union, which will give support to various forms of propaganda such as the organization of flying courses, anti-gas courses, etc. The Government will also appoint an inter-departmental committee to devise plans for the collection of funds for the purchase of new aeroplanes, and to consider means of establishing permanent sources of income for the aviation fund.

CZECHOSLOVAKIA

A Russian air mission headed by General Alksnis, Commander-in-Chief of the Soviet air arm, and consisting of eleven other members, arrived in Czechoslovakia on 15th July. According to a statement of the Czechoslovakian Ministry of Defence, the purpose of the visit is to return the call paid by General Fajr, Commander-in-Chief of the Czech Air Force, to Soviet Russia last year; but the German and Austrian press continue to proclaim that Russia is organizing advanced air bases in Czechoslovakia. In this connection the asserted expenditure by the Czechs of a part of their recent defence loan on strategic railways to Roumania is put forward by other countries as further proof of an offensive air pact between Russia and Czechoslovakia.

FRANCE

" POU DU CIEL " TESTS.—Shortly after taking office in June, 1936, the French Air Minister, M. Pierre Cot, barred the " Pou du Ciel " in France pending the results of the wind tunnel tests. The following facts have been ascertained by the tests. The " Pou " is stable when climbing. In horizontal flight it becomes unstable. In a dive, instability increases and the machine may turn on its back uncontrollably. The engine revolutions have practically no influence on the stability. Shifting the centre of gravity has no influence on the conditions of stability if within a few centimetres of the original position prescribed by Mignet. If the angle formed by the two wings is given greater variation the controllability improves, and the aircraft, although remaining unstable, can be controlled.

FRENCH ALTITUDE RECORD.—M. Georges Detre, established during August, a new French altitude record of 14,836 metres (48,674 ft.). This figure exceeds by more than 400 metres (1,749 ft.) the world altitude record set up by the Italian, Signor Donati, in April, 1934. The aircraft used by M. Detre was a " Potez 50 " fitted with a Gnome Rhone K.14 engine. The British world record is 49,967 ft.

YOUTHFUL AVIATION.—In order to popularize flying and at the same time to encourage pre-military flying instruction among the younger generation in France, the Air Minister, M. Pierre Cot, has decided to invite all clubs belonging to the *Fédération Aéronautique* and to the *Fédération Populaire des Sports Aéronautique* to create a popular Aviation Section in which young people of from 14 to 21 years of age can be trained in flying. The scheme envisages three stages of training of the young pilot:

(*a*) Preliminary instruction given to children at school from 9 to 14 years of age;
(*b*) Gliding for youths of 14 to 17 years of age;
(*c*) Power-driven flying for selected young people of 18 to 21 years of age,

the last two being entrusted to clubs or popular flying sections.

Training will be gratis and by selection, and the Air Ministry intends to equip the flying clubs with practically everything necessary for their work: gliders, light aircraft, fuel.

Selection will be strictly applied at each stage of training by means of physical examinations and technical tests under the control of responsible commissions.

GERMANY

AIR DEFENCE MEASURES.—At an Air Defence Exhibition in Cologne a device was demonstrated for obtaining an unlimited supply of fresh air for the ventilation of gas-proof chambers. The device consists essentially of a metal tube which is pushed into the ground, and from which air is sucked by means of an electric pump. It is claimed that the earth acts as a natural filter, holding back all poisonous gases, and that the device works equally well in all classes of soil.

ITALY

AIR FORCE EXPANSION.—On 12th September Signor Mussolini announced at the Cabinet Council that a special grant had been earmarked for the army, navy, and air force " to make our military preparation meet the necessities of the situation and to perfect it within a certain period of time."

The amount appropriated was not divulged, but he revealed that this extraordinary expenditure had recently been decided upon owing to the International situation. Signor Mussolini also announced that the policy of economic autonomy had already given satisfactory results; presumably this reference included the production of synthetic petrol, to which special attention has recently been paid.

Under a Royal Decree published on the 24th August, the authorized establishment of Corporals, Leading Aircraftmen and airmen for the 1936–1937 financial year is 34,000, which shows an increase of 3,604.

Under the same decree authorization is granted for retaining in the service, for the 1936–1937 Financial year, 1,600 short-service officers and 1,600 short-service N.C.Os from the rank of Sergeant upwards. These figures show an increase of 100 in each case. It is estimated that the total establishment of the *Regis Aeronautica* for 1936–1937 will be 4,661 officers and 42,626 other ranks.

Under a Royal Decree the following extraordinary expenditure is authorized for the 1936–1937 financial year in connection with operations in East Africa: £20,633,000, including £790,000 allotted to the Air Ministry. This compares with an authorized extraordinary expenditure for 1935–1936 of £32,300,000, including £3,100,000 allotted to Air Ministry.

ETHIOPIA.—General Valle has recently announced that eight main airports have been built in East Africa, usable even during the rainy season. A vast net of aviation camps not more than 125 miles apart from each other are also being built, and the whole of Ethiopia will be under control by aircraft. The Headquarters of the aerial police will be at Addis Ababa, where reserve aircaft will also be stationed in readiness to transfer troops at short notice. Italy will maintain three hundred aircraft in Ethiopia and one hundred transport aircraft are at present under construction which will be capable of carrying 2,500 men and stores 950 miles in one day. Their speed will be 250 m.p.h.

HYDROGENATION.—The recent campaign in East Africa and the effect of sanctions has proved the vital importance to Italy of an adequate oil supply. The Italian government has expressed its determination to do its utmost to secure a national fuel production that will at least be sufficient to cover the country's most urgent requirements regardless of the cost involved. A Royal Decree has now appeared in the Official Gazette by which firms engaged in the process of hydrogenation will be assisted by exemption of taxes, and provides for the appropriation of coal mines with State assistance for development work.

The recent agreement between Italy and Germany which regulates the conditions under which civil aircraft may operate between the two countries, may very likely include mutual assistance in the production of synthetic petrol. The need of both Germany and Italy is identical in this respect, and German processes are said to be in advance of any other country.

PASSIVE DEFENCE.—From time to time reports have been received of practice air attacks on towns in Italy with a view to the education of the population in passive defence. The reports indicate that these practices are efficiently carried out.

It is now reported that the formation of a *Unione Nazionale Protezione Antiaerea* has been approved by the government, and that this organization will be placed under the authority of the War Ministry. The Union's task will be to co-ordinate all the official bodies of anti-aircraft protection, and will deal with—

(i) propaganda and instruction in individual protection;
(ii) the construction of shelters for civilians;
(iii) distribution of gas masks and other protective apparatus;
(iv) formation and instruction of groups of volunteers for co-operation with the police, fire brigades, etc.
(v) the study and subsidizing of protective devices and measures of defence;
(vi) the collection of funds.

It is also reported that a new system of alarms in case of air attack has been successfully tested in Rome. It disconnects all telephones automatically and substitutes a special device which causes all telephones to ring in a different tone to the customary service call and at the same time operates other means of alarm, such as sirens, etc.

The following is an account of a practice air attack carried out at Padua :—

"Short notice of this exercise was announced to the public by means of loud speakers, and all normal lighting was extinguished and searchlights came into action. The approach of the attacking aircraft was signalled almost immediately, and anti-aircraft gun batteries signalled the advance to each other by means of rocket flares.

"As soon as the searchlights had picked up the aircraft the ground batteries opened fire with blank rounds. The target for the attackers was a wooden building standing

in the centre of the exhibition grounds, and bombs were simulated by exploding magnesium and smoke fireworks, which at first commenced to fall outside the grounds, gradually approaching the target, which was finally bombed. When it was observed that the target building had caught fire the aircraft moved off and the passive ground organizations came into action to extinguish the flames and to give assistance to those persons supposed to have been injured or gassed.

"All ground service personnel worked in respirators. Representatives of the fire brigades of Ferrara, Modena, Reggio Emilia, Parma, and other cities took part in the exercise."

JAPAN

STUDY OF AIRSHIP DESIGN IN GERMANY.—It is understood that the Ministry of Communications, impressed by the success achieved by German airships, has decided to send a small mission to Germany to study airship design, pilotage, and business management. For this purpose it is stated 69,000 yen (£4,025) has been appropriated in next year's budget.

ACCIDENTS.—According to various reports, the following numbers of accidents have occurred during the three months ended 30th June, 1936 :—

Accidents.		*Escapes by Parachute.*		*Injured.*		*Killed.*
Naval Air Service	14	—		9		23
Army Air Service	17	4		10		7
Civil Aviation	6	—		8		1

SOVIET UNION

LONG-DISTANCE NON-STOP FLIGHT.—The non-stop long-distance flight from Moscow via Franz Joseph Land to Kamchatka, and thence to Nikolaievsk (North of Vladivostok) was undoubtedly a very fine achievement, requiring expert navigation as well as great endurance. Chkalov was the chief pilot, and took with him a crew of two. Radio-telephony was used throughout the flight. The flight took 56 hours 20 minutes, and the distance covered was 5,820 miles.

The route followed was over very difficult flying country, where the weather is subject to constant and generally very sudden changes. The actual route was as follows :—Moscow–Archangel ; across the Barents Sea to Franz Joseph Land ; across the Arctic Sea ; past Cape Chelyuskin and thence across the Kamchatka Province and the Kolyna Mountains ; Petropavlovsk ; across the Sea of Okhotsk to Nikolaievsk (near Sakhalin Island).

The aircraft used was the A.N.T.25, which had been designed by A. N. Tupolov especially for the flight. The A.N.T.25 is a single-engined (Soviet engine M.34.R.N. of 950 h.p.) cantilever low-wing monoplane, equipped with blind flying instruments and other special navigating instruments for flying in the Arctic regions.

The *Moscow Daily News*, reporting on the flight, said :—

"The crew of the aeroplane brilliantly accomplished the task set. Remaining 56 hours 20 minutes in the air, the aeroplane covered a distance of 5,820 miles. During the flight, they had to overcome exceptional difficulties. In the Arctic Sea they encountered severe Arctic cyclones and many layers of cloud. For more than five hours the aeroplane fought its way through to a height of more than 14,000 ft., flying blind against a head wind which at times reached a velocity of 45 miles an hour, and with the surface covered with ice. Reaching Petropavlovsk successfully,

a pennant was thrown down upon the city, and the aeroplane headed for Nikolaievsk. Over the Sea of Okhatsk an exceptionally violent southern cyclone, together with dense fog, was encountered.

"As soon as the People's Commissariat of Heavy Industries received news of the exceptionally difficult weather conditions of the flight, an order was sent by radio-telephony that the pilot was to land and risk no more."

SPAIN

There appears to be no doubt that the Government forces at the beginning of the Civil War were assisted by France, who supplied aircraft and other munitions, while Germany and Italy gave active assistance to the rebel forces. Concrete evidence of Italian help was given by the forced landing of three aircraft in French Morocco on their way to Spanish Morocco. The aircraft were said to be of the Savoia S.81 type, and to be fully equipped for war purposes. Although the Italian Government declared that the aircraft were sent out by a private firm, it is hardly conceivable that 17 aircraft of this type could have been sent without official knowledge.

It is not likely that either side in Spain were well equipped with aircraft or had pilots sufficiently trained to carry out air warfare on a large scale, and this rather tends to confirm reports that the successful air operations carried out by General Franco's forces may have been carried out by foreign pilots.

The principal role of the rebel air forces was to transport their military forces from Morocco to Spain, and this appears to have been carried out successfully in large transport aircraft, and possibly in one or two cases by sea convoys, strongly supported by aircraft. At the same time the rebel air forces were used to harass the Government warships, and the battleship "Jaime I" was hit by a bomb which severely damaged the fore part of the ship.

The lack of Government air activity tends to confirm the report that there is a shortage of aircraft and pilots. From reports of Rebel air action, on the other hand, it appears that the Rebel air forces are giving considerable assistance in the attack on Madrid. It is probable that many of the Italian and German aircraft which were said to have been supplied to the Rebels before the embargo was enforced, are still in service, and may possibly be piloted by Italian and German personnel.

UNITED STATES

NEW AIRCRAFT FOR THE ARMY AIR CORPS.—As a result of a recent competition for single-seater pursuit (fighter) aircraft for the Army Air Corps, a contract was awarded to the Seversky Aircraft Corporation of Farmingdale, Long Island, New York. The contract is for 77 aircraft and spare parts equivalent to 8 aircraft.

The aircraft in question—designated the P.35—is of the all-metal low-wing monoplane type and is equipped with a single Pratt and Whitney "Twin Wasp" engine of 1,000 h.p. A constant speed propeller, retractable undercarriage, flaps and an enclosed cockpit for the pilot are fitted, and the maximum speed at 11,000 ft. is given as in the neighbourhood of 315 m.p.h.

The War Department has announced that a contract for the construction of "a sufficient number of two-engined attack aircraft and spare parts to provide for a thorough service test" has been awarded to the Curtiss Aeroplane and Motor Company, of Buffalo, N.Y. The number of aeroplanes included in this contract is not stated.

It is believed that this aircraft, the Y.A.–18, is the only two-engined attack aircraft in the world. It is an all-metal, mid-wing monoplane with retractable landing gear and tail wheel, and the aircraft ordered will be fitted with Wright G.R.–1820 " Cyclone " engines.

A contract for fifty primary training aircraft has been awarded to the Stearman Aircraft Company, Wichita, Kansas.

The specifications for this type demand a simple, rugged aircraft with economy and ease of production as primary requirements. It must attain a speed of 125 m.p.h., with a reduced cruising speed of 105 m.p.h. The aircraft must be able to carry a petrol supply for four hours at cruising speed, and be capable of climbing to a height of 10,000 ft. with a full load in 18 minutes.

The training model receiving the award is a biplane with a tandem seating arrangement so designed that the instructor sits in front of the student and is able to direct him either by inter-phase or visual signals. It is fitted with one 225-h.p. seven-cylinder air-cooled Lycoming engine."

REVIEWS OF BOOKS

GENERAL

The King and the Imperial Crown. The Powers and Duties of His Majesty. By A. Berriedale Keith. (Longmans). £1 1s.

A big book; a big subject; and a subject dealt with in a big manner by an author whose record places him very high among our living publicists: this will doubtless be the verdict with which readers will probably lay down, with a slight sense of fatigue, but a deep sense of gratitude, the fine volume which Professor Keith has lately published. The title alone is an indication of the scope of the subject: to deal fully with it the author has had to spread a wide net for information, and when all the material was collected, the task of arrangement and composition was one which required, and has been completed with, the most minute care and great ability. There are seventeen chapters, and although it is almost invidious to select any as of outstanding importance, the groups which can be specially commended for study are those which begin at Chapter V on "The Forms of, and Responsibility for Royal Acts," and at Chapter XI, "The King's Influence in Defence Issues"; and the all-important last chapter, "The King and the Empire."

Of course, this learned author has had a good deal more material for his work than his predecessors in the same field. Hallam and Bagshot, Stubbs, and Dicey wrote on what they could see or learn in front of the scenes, so to speak. It has been reserved for their successor to look behind the scenes. The three big books, the "Letters of Queen Victoria," Buckle's "Life of Disraeli," and Morley's "Life of Gladstone," have in Professor Keith's day let light into places which, when his predecessors wrote, were dark. Then there is Sir Sidney Lee's "Life of King Edward VII," and Sir Henry Ponsonby's valuable "Sidelights on Queen Victoria," and other books by people who were more or less familiar with the great Queen and her son. The various War books which Prime Ministers and other Ministers have published since the War have enabled Professor Keith to draw a picture, not full, yet accurate and instructive, of King George V. His book, like the so-called British Constitution, is a collection of precedents. In England we are governed more by these than by anything else. We have, fortunately, no hide-bound Constitution in the United States' sense. There is nothing which Parliament cannot do; but precedent has laid down certain rules which prescribe the course to be taken by the Sovereign in dealing with Parliament and Ministers, the Dominions, the Colonies, and the Services. These had to be collected from a wide field, and no one can value too highly the labour which has brought them together and classified them in an arrangement which is logical, orderly, and statesmanlike.

When the author discusses the relation of the Dominions he of course has much to say on the Statute of Westminster, and shows that where it is adopted or accepted by a Dominion, as in the case of South Africa and the Free State, the tie between the Mother Country and the Dominion is so loose that "autonomy" may at any time follow. This is, of course, true, and must have been foreseen by any prudent observer at the time when that dangerous law was passed. Yet so lately as 1934 the Supreme Court of the Free State held that the Anglo-Irish Treaty of 1921 was

the Supreme Law of that State; and as long as the Free State Court so holds, secession is not lawfully possible. In South Africa some people hold that there is a right to secede; others that there is not. The ordinary reader will ask how there can be such a right unless it is granted by express words in an Act of the Imperial Parliament. Without such an Act, secession would be no exercise of a right—it would be a revolution.

The Life of John Butterworth, Earl of Jellicoe. By Admiral Sir Reginald Bacon. (Cassell & Co.). 25s.

The life story of Jellicoe is not merely the biography of a very great officer; it is the embodiment of the Navy's history from the days when steam had begun to supersede sails, through the years of its material revolution, to the acid test of the War. In the course of this progress he came to play an ever-growing part, until at length he commanded in battle the greatest fleet the world has ever seen.

But it is the man himself who, throughout this biography, claims the reader's unstinting admiration. He, more than any other of his generation, carried on the torch which has kept alight the high traditions of the old Navy in the fleet as he left it to his successors to-day. From his earliest days we see young Jack—what more appropriate name for a lad who was to prove himself the pattern of a naval officer?—throwing himself heart and soul into his profession: studying assiduously, learning eagerly; alert in mind, fit in body; accepting responsibility as a golden opportunity; usually a little ahead of his contemporaries through sheer merit and hard work, but always with them as a delightful companion and good sportsman.

That wonderfully stable temperament which was one of his chief attributes buoyed him through trials and vicissitudes which might have left many another man a nervous wreck; as a young Lieutenant, he was completely knocked out for two days by a compressor block when the cable parted; he was nearly drowned when a boat in which he went to the rescue of a stranded ship was swamped; while laid up in his cabin with Malta fever, the "Victoria" was rammed by the "Camperdown," and he had to slide down the side of the sinking battleship and swim for his life; seven years later, on the same date, he nearly died from a severe wound received in the Boxer expedition; the mental and physical strain which he supported as C.-in-C. of the Grand Fleet and as First Sea Lord at the height of the Submarine Campaign were such as no commander in the late or any other war has ever been called upon to endure. Yet to the day of his death this gallant little man retained that unruffled serenity and radiated that quiet confidence which marked him out as the true and great leader he was.

More than half the volume, very properly, deals with that part of Jellicoe's career which began when he assumed command of the Grand Fleet. We read for the first time of all his chivalrous efforts to avoid superseding Sir George Callaghan, and the extreme reluctance with which he replaced a Commander-in-Chief who had imbued the fleet with such feelings of "extreme admiration and loyalty"—to use his successor's own words. In such circumstances only a very magnetic personality could have won the hearts of his men so swiftly and completely as Jellicoe did. Once the reins were in his hands, the new Admiralissimo was soon driving his huge team with characteristic energy and efficiency. Those who still picture the British battle fleet cowering in harbour and only making brief and timid excursions at long intervals should glance at the track chart of the Fleet flagship's movements facing p. 194, and they will speedily discover their mistake.

The concise and easily comprehended account of Jutland, with admirable

diagrams, is a feature of the book. The author is to be specially commended for avoiding those personalities which have, too often, marred other chronicles of that battle. Perhaps, to the naval student, he seems to labour unnecessarily his justification for Jellicoe's every movement and action; but doubtless he had in mind that there are those who still criticise with the freedom of abysmal ignorance. It is a pity, too, that he gives the slightest impetus to the renewal of the argument as to whether it would or would not have profited us if Jutland had been fought to a finish. Under the conditions in which the fleets met, no such climax was possible, and such a discussion is merely academic and misleading.

Jellicoe's time at the Admiralty makes less happy reading than his achievements in the Grand Fleet. His task was even more vital; indeed, it was desperate. While the solution of the problem of the submarine menace was infinitely complex, he was not assisted by having to endure the almost open hostility of an ignorant, impatient, and intriguing Prime Minister. We would rather that Admiral Bacon had omitted the sultry tale of the political manœuvres which brought discredit on many, but not on the man who had worked himself nearly to a standstill to save his country. If changes were necessary, they could have been effected very differently.

Fortunately, this is by no means the last chapter. It is a delight to see Jellicoe coming into his own again in his triumphant cruise to the Dominions and during his most popular Governorship of New Zealand. No man ever deserved rest and relaxation more thoroughly, yet he devoted his wonderfully preserved energy for eleven more years of life to the welfare of the rank and file who had fought in the War. As one by one his critics were exposed and sank into well-merited obscurity the nation began to realize, more and more, what it owed him. The spontaneous tribute paid by men and women of all classes as he passed to his last resting place in St. Paul's was something which anyone who saw it will never forget: something which no other Admiral has ever received since Nelson travelled the same road.

Admiral Bacon is to be congratulated on having discharged a weighty responsibility with meticulous care and diligence. Our only criticism must be that he has supplied his readers with an over-full measure of detail which makes the volume bulky and therefore rather expensive. We would like to see a shorter and cheaper edition, which would be more likely to find its way to where it should be—in the cabin of every young naval officer. He could not have ended this inspiring record with a more appropriate epitaph than that written by our most truly naval poet—Admiral Hopwood in his valedictory *The Master Mariner*: everyone who knew and had the honour to serve under Jellicoe will echo the sentiment that he indeed earned—

"The crown of a deep affection which none but the masters wear."

Marlborough: His Life and Times. Vol. III. By Winston S. Churchill. (G. G. Harrap, London). 25s.

When Mr. Churchill's second volume failed to get beyond the year 1705, it was clear that the three he originally contemplated would not suffice for the completion of his task, unless he altered his treatment radically and curbed the free flow of his pen very severely. He has not done so: the three-decker is to have a fourth deck, and he has, as before, let himself go with freedom. He is as lavish with words as his hero was niggardly with guineas, and this massive volume only reaches the end of 1708 with the fall of Lille and the recapture of Ghent. It was probably best not to alter the scale, but one may ask whether the work would not have been better had the pruning hook been used more freely early on and the story completed within the fairly ample space of three volumes of over 500 pages each. How many people

will have time to sit down to a feast of such Gargantuan proportions. More than once the story flags a little; points are sometimes unnecessarily emphasized, and there is some danger of the wealth of detail obscuring the issue.

Naturally the ample dimensions Mr. Churchill has allowed himself give him full room to tell the stories of Ramillies and Oudenarde, and Lille and Wynendaele in considerable detail, and his vigorous and picturesque narrative, greatly assisted by the numerous maps and diagrams, does justice to his theme. There are some curious gaps and omissions, there is more than one telling passage in Deane or Parker or Millner or other contemporary diarists which one might have expected him to quote, and there are several points on which new light is wanted which he has apparently overlooked or on which he has been unable to find anything fresh. He adds one important tactical detail about Oudenarde, showing that the success of the preliminary attack on the French right at Taviers was greatly helped by the pushing forward of two guns to assist the attack at close quarters. This comes from an old map made for the Dutch Marshal Overkirk, though Mr. Churchill does not tell us where it is to be found. But in the main, as in the previous volume, the author has nothing very new or startling to tell us: the Blenheim archives do not seem to have yielded any great discoveries and, though Mr. Churchill has made considerable use of Continental historians, the details they add throw little light on the problems those primarily interested in Marlborough as a leader of British troops want to have solved. As before, Mr. Churchill tells us next to nothing about the British regiments who served under Marlborough: he cannot even find space for the Orders of Battle for the three campaigns; he never identifies the regiments employed in any siege; he gives Cadogan four British battalions at Oudenarde (he had six), and Argyle twenty when there were but nineteen there all told; he assigns a main share in the victory at Wynendaele to the British infantry, when but four of the twenty-four battalions present were British, two of them being "Scots Dutch." He talks about the extent to which Marlborough's operations were affected by the demands of the Spanish campaigns without reference to the actual deductions of British troops from his army in 1703 and in 1706.

These may be details, but they are details one looks for in so ample a biography of a great commander of British troops. A more serious criticism is Mr. Churchill's failure to give the precise evidence for some of his more picturesque details: he makes many statements, not to be supported by Coxe, or the Dispatches or the well-known diarists or collections of letters, without citing his authorities. One is the more anxious to have chapter and verse because he is prone to over-positive statements where the evidence hardly warrants it: the "must have been" of one page has become "was" on the next. Thus the "we do not believe" of p. 341, that Marlborough really wanted Eugene to take command in Spain in 1708, is "there can be no doubt"—a phrase to be avoided in controversial matters—by p. 347. Mr. Churchill seems to confuse probability with proof; like the Bellmen in "The Hunting of the Snark," he proceeds on the principle "what I tell you three times is true."

As in the last volume, Mr. Churchill devotes considerable space to the political background in England, and brings out most effectively the all-important gradual weakening of the hold of Marlborough and Godolphin over the Queen, their quarrel with Harley, and how they were driven reluctantly to lean upon the Whigs. This is not new, but Mr. Churchill rightly emphasizes the importance of the loss of the Queen's favour and the weakness of the position of Ministers who had no party behind them in days when party feeling ran so high and when parties were really more distinct and even more organized than they were to be for another hundred years.

By 1708, Marlborough's position at home was already undermined, and it was beginning to affect adversely the conduct of his campaigns.

Mr. Churchill has a new victim to trounce in the Dutch Deputy, Goslinga, whose follies he exposes effectively and with zest. Otherwise he is tolerance itself towards his predecessors and he has substantially reduced his percentage of historical errors, except that he has not yet mastered " the Empire " or appreciated the relationship to it of the various dominions of the Hapsburgs. But the fourth volume will give him a chance to get the general map of Europe right as regards Hungary.

Captain James Cook, R.N., F.R.S. By Vice-Admiral Gordon Campbell, V.C., D.S.O. (Hodder & Stoughton). 15s.

It is usual to talk of a great man as " produced " by any Service or institution with which he may have been connected; more probably they should be said to have " acquired " him. But whether " produced " by the Royal Navy, or " acquired " by it, Captain Cook, of all British sailors who may claim some real title to the overworked name of genius, is the least appreciated by the public at large, with the possible exception of Robert Blake. The public knows him vaguely as the discoverer of Australia, as it knows King John signed Magna Carta, but of the real nature of his work and gifts, it is content to remain as ignorant as it is of that great Constitutional instrument. And this is so for two reasons; firstly, that for an understanding of his work of discovery and navigation some small effort to comprehend technicalities is essential; secondly that Cook has no immediate and obvious appeal—he lacks the temperament and blatant individuality that customarily marks the genius, and that makes a presentation of, say, Drake or Nelson so much easier both to perform and enjoy. Cook's genius was so predominantly " an infinite capacity for taking pains," and so little " an infinite capacity for doing things without taking them," that none but a biographer of deep perception and subtle skill will ever succeed in making him a truly popular hero.

Admiral Campbell would probably be the first to agree that he has neither the psychological insight nor subtlety of style necessary to enable him to do what many others have already failed to do—elucidate the character and sense of leadership of the great explorer. On the other hand, where more technical aspects are concerned, Admiral Campbell has scored a considerable success. It is true that he is a little prone to the obvious (" the XVIIIth century in Britain was a period of change. . . . There were . . . no trains, no telephones," etc.), and on page 15 is guilty of ascribing Drake's Voyage of Circumnavigation to 1597, but, in general, his style, while occasionally ungrammatical, is plain, forthright, and breezy, and Cook's three great voyages are, with the aid of some excellent maps, made clear to all who will make the smallest intellectual effort.

In short, this biographer has told us as well as anybody, and better than many, what Cook did; it still remains for someone to tell us how he was able to do it.

How is the Empire? By F. Percy Roe. (Pitman & Sons). 6s.

The author's aim is to give the reader a careful and scholarly perspective of the whole British Empire, so that the latter may see it for what it really is.

Captain Roe leads us by gradual stages through the Crown Colonies, Mandates, India, and the Dominions to his conclusion—with which few will disagree—that in the hands of the British Commonwealth and the United States lies the leadership of the world.

NAVAL

At War with the Smugglers. By Rear-Admiral D. Arnold-Forster, C.M.G. (Ward Lock & Co.). 12s. 6d.

Literature dealing with smuggling during the XVIIIth century is limited,

chiefly on account of the lack of records. Men engaged in breaking the law naturally refrained from committing themselves on paper, and most unfortunately much official material on the subject perished in 1814 when the London Custom House was burned down. Such official evidence as still exists is stored in the " out ports." From copies of Customs letters at Portsmouth, and from private family correspondence, Admiral Arnold-Forster has pieced together a very interesting history of the career of William Arnold, Collector of Customs at Cowes from 1777 to 1801. This gentleman has another claim to remembrance as the father of the famous Doctor Thomas Arnold, Head Master of Rugby. He was a fine type of public servant—upright, diligent, and actuated with a high sense of duty in his efforts to repress smuggling.

William Arnold's career began in the General Post Office, London. After eleven years service he obtained the post of Collector of Customs for the Isle of Wight. This was a responsible position, as from the proximity of the island to the French ports and the Channel Islands, it was much frequented by smugglers of the boldest type. During the American War, and also the Revolutionary War, smugglers never relaxed their " free trade " activities, and, as is well known, often acted as agents for supplying information to both sides. Revenue craft, principally fast sailing cutters up to 200 tons, were employed in the areas under the Collector's orders. These craft worked in conjunction with small naval cruising ships as well as with the Riding Officers of the Excise department who worked inland. Under Arnold at Cowes was the Revenue Cutter " Swan," a name handed on in his time to at least four successive vessels. Details of their adventures given here include—besides pursuits, captures and fights with smugglers—shipwreck, salvage, work as tenders to the fleet on the coasts of France and Holland, engagements with enemy privateers, and other stirring incidents.

Smugglers never lacked for numerous sympathizers ashore in every county. Financed by speculators who only incurred risks of loss of property, the seamen and landsmen engaged in the " trade " were faced with punishment by fines, imprisonment, impressment, and even death in the fights that not infrequently happened. The Smugglers Act was but indifferently administered by local Justices, and Collectors often experienced difficulty in obtaining convictions.

Illustrated with reproductions of contemporary pictures, the book is well documented. It is most informative in its sidelights on the times, besides containing many interesting aspects of family life.

The Flower of England's Garland. By G. E. Manwaring. (Philip Allen). 10s. 6d.

The " Flower of England's Garland " is the Navy, as described by a XVIth century British Ambassador to France. The first part of this book is devoted to a sketch of the history and conditions of the Navy from 1466–1815, collated from the sayings and writings of various contemporary foreign observers. The dignified language of these critics of old makes refreshing reading after the dictatorial tub-thumpings of our own time. It is interesting to read that even in the XVIIIth century the size of capital ships was a subject of serious discussion ; and to learn that even in Armada days " nothing is as good as it was." The Spanish Ambassador reports to his King of the personnel of the British Navy that " they appear bellicose," but are " really pampered and effeminate, different from what they used to be."

The remainder of the book consists of five essays which have already appeared in other publications. Two of them, which outline the history of the introduction, and give exact details of the uniform of officers and men, are of general interest and of value for reference purposes.

The biographical sketch of Captain Woodes Rogers is very interesting and

reveals this officer, not only as a great commander, but also as a master of organization. His successful voyage round the world in command of two small ships must rank as one of the greatest exploits of his time. During the voyage he rescued Alexander Selkirk from the island of Juan Fernandez, thereby, possibly, becoming responsible for Defoe's immortal romance. Dampier served as navigator for this voyage.

The subjects of the other two essays are "Parliament Joan—the Florence Nightingale of the XVIIth Century," and Sir Home Popham's expedition to Ostend in 1798.

River of Golden Sand. By Thomas Woodrooffe. (Faber and Faber). 8s. 6d.

This is a book to pick up as a most pleasant relaxation to rest the brain after an over-strenuous day's work, or to wile away a pleasant hour or so on a "make-and-mend" or a Sunday afternoon.

It deals mainly with the life and adventures of a Sub-Lieutenant in a gunboat up the Yangtze, or Ta Chiang—Great River, as the Chinese call it. One suspects that the author is often retailing his own experiences; be that as it may, his characters are very live and human, and he writes with such an easy and attractive pen that the reader is likely to find himself sitting up "just a little longer," to read "just one more chapter," until he comes to the last page. Incidentally, Lieutenant-Commander Woodrooffe—why does he not use his honourable rank and title—has done a good service to the Navy in making known something of the very remarkable work of the young officers in these small units of the fleet, and of how they are wont to cope with situations which arise where it is not possible to walk aft, tap on the door which leads to higher authority and say, "Please sir, what shall I do . . ."

MILITARY

A Correction

The Liao-Yang Campaign. (William Clowes). 5s.

The title of Lieut.-Colonel A. H. Burne's book was given in the August review as "The Liao-Tung Campaign." It should have been "The Liao-Yang Campaign."

AIR

l'Aviation de Bombardement. By C. Rougeron. (Berger-Levrault, 5 rue Auguste-Comte, Paris 6e). In 2 vols. Frs. 25 each.

Aerial bombing has produced too few reasoned analyses, and the consequence is that the official views of most air forces upon the subject tend to lack definition. The aeroplane is vaguely regarded as a gun, which conveys a missile to an objective and gives it a striking velocity. Fundamentally this view is sound, but it has the serious drawback that it discourages invention and unorthodox development and confines bombing methods and progress to a gradual increase in range and weight. If, however, bombing is regarded as a new method of attack, if one starts from M. C. Rougeron's assumption that: "*l'aviation de bombardement diffère singulièrement de toutes les autres armes*," the need for a comprehensive scrutiny, stage by stage, becomes apparent. There must be a logical testing in which, temporarily at any rate, tradition and precedent are relegated to the background.

M. Rougeron has produced a work which is as stimulating as it is important. Running to 681 closely-printed pages, it aims at completeness. At first it tends by its boldness to alienate the sympathies of those who have been brought up with, perhaps, an exaggerated regard for the theories of the classical writers upon strategy and tactics; but the well-reasoned, well-documented examination of the relative parts played by anti-aircraft measures and the bombing aeroplane in the first volume

soon captivates the reader. In view of the opinions that are so frequently expressed in this country, it comes as a surprise to find that M. Rougeron attributes a high degree of effectiveness to anti-aircraft measures and especially to the big anti-aircraft gun; so high indeed that he questions the possibility of securing accurate bombing without heavy losses either with what is known as " precision " launching (a misuse of words surely) or with dive bombing. In this part of the work many valuable tables are given dealing with the impact of bombs launched from various heights and at various speeds as well as with the average accuracy to be expected from machine-gun fire directed at aeroplanes flying on a straight line and while manœuvring.

No good could come of any attempt to summarize M. Rougeron's conclusions in a short space, and the only correct course is to recommend all Air Force officers and all those others who take an interest in the technicalities of modern bombing methods and of the scope of this form of attack in the future, to obtain and to study this work. But one or two points may perhaps be mentioned without giving a misleading impression of M. Rougeron's theories. I have already referred to his belief in the efficacy of the big anti-aircraft gun. He also believes that the difficulties of bringing defensive fire to bear from a heavy bombing aeroplane against fighters are great, and as a result of these two considerations, he holds that the heavy bomber, the large multi-engined load-carrying machine, will have its activities confined to *temps couvert* when clouds or darkness aid in its concealment while the daylight bomber will be very fast and may employ some new form of bomb. In the course of looking at the various possible kinds of bomb, M. Rougeron discusses the planing bomb and the propelled bomb or " aerial torpedo," as the newspapers are so fond of calling it, with automatic or radio direction. His discussion of the part played by the aeroplane in naval warfare occupies eight chapters and raises some interesting points.

At the conclusion of the work M. Rougeron speaks of enormous air forces and gives to the phrase a " nation of airmen " " *un peuple d'aviateurs* " originally used by Sir Philip Sassoon when he opened the London Aeroplane Club, a new and sterner meaning.

Air-Power and Armies. By Wing-Commander J. C. Slessor. (Oxford University Press, London: Humphrey Milford, 1936). 10s. 6d.

" This book is based on a series of lectures delivered at the Staff College at Camberley "; and therefore it bears, not unnaturally, the impress of thought devoted rather to the action of air-forces in a particular sphere than to their general strategy.

The author defines the conditions envisaged in his work to be " those of a campaign on land in which the primary problem at the time is the defeat of an enemy army in the field." And he desires to emphasize the " rather obvious truth " that in such conditions the object " of an air-force contingent in the field is to assist and co-operate with the army in the defeat of the enemy's army, and of such air-forces as may be co-operating with it." But the very words " an air-force contingent in the field," appear to show a false appreciation of strategy. To introduce such a body is to deny that fluidity to air-power which is one of its greatest assets. To whatever may be the primary object at the moment—whether it be the destruction of the hostile army, or home-defence, or the protection of commerce, to that object should be devoted, not a contingent, but all the air-force that can be made available.

The author is at pains to show that too much stress is being laid on the attainment of " air superiority." He holds that, though of great importance, it is only a means to an end. The military end is victory, to which the efforts of all three

Services should be co-ordinated. But the immediate and continuing object of the naval and aerial forces is the achievement and maintenance of an ascendancy, as great as warfare in three dimensions may permit, in their respective spheres. For, unless a considerable measure of control is exercised over communications, neither the Army, the Navy, nor the Air Force will possess that striking power without which victory cannot be achieved. Indeed, before the author can embark on the land campaign which is the subject of his book, he must have "air superiority." It is as he shows most difficult of attainment. It is not to be won merely by the hunting down of evasive aircraft. It must be pursued also by the attack of aerodromes, of aircraft factories and of areas of such importance to the continued existence of the enemy that he will perforce assemble all his aircraft in their defence.

Finally, he arrives at the conclusion, derived in the main from the consideration of trench warfare, that "the primary task of the air-striking force in a land battle must be to isolate the area attacked from reinforcement and supply"; whereas, with "the small, highly mobile, hard-hitting armoured and mechanized army of to-morrow" which he envisages in his concluding pages, the air-force must justify its existence by a much greater and more positive role: as a vehicle for command, for air-supply, by which alone, whether before or after battle, the mobility of such formations can be maintained; for reconnaissance; for direct aid in battle; and for pursuit.

Apart from these faults and its somewhat restricted outlook, the book is excellent. The chapters on the battle of 8th August, 1918, are particularly interesting. It has long been held that the Army with a little more faith in victory might have won a decisive success on that day. Wing-Commander Slessor makes clear that this failure in achievement was also due in part to mishandling of the air-force, and he deduces useful lessons therefrom.

War over England. By Air Commodore L. E. O. Charlton, C.B., C.M.G., D.S.O. (Longmans, Green & Co.). 12s. 6d.

This is a sensational book, obviously written as a warning of the terrible things which may come by air. It is in three parts: the first is a potted version of the history of the air raids in the late war; the second is a lurid picture of a war in the near future before we are prepared for it; the last describes a conflict in the dim future when we are much better prepared, but which, the author seems to visualize, will have much the same outcome as that of the fight between the Kilkenny cats.

If the reader has patience to bear kindly with this writer's *penchant* for lurid details, his ill-favoured sneers at the older Services, and his obvious ignorance of their functions and capabilities, he will find that there is a very considerable substratum of reality and truth in a work which the reviewer was sorely tempted at first to throw aside and ignore as being yet another contribution to that unbalanced treatment of the air menace which has been the worst enemy of the Royal Air Force and the air defences of this country in general.

Air Commodore Charlton has yet to learn the old lesson that over-statement of a good cause tends to repel those who would otherwise espouse it; but his style will appeal to those who like their drama hot and strong.

His final vision of a world at peace, governed by a "Court of Equity" at Geneva, with an international air police force—"the only military force on earth," to enforce the Court's decrees, must be of another world than that in which we live—a world repopulated by a people all of the same nationality, all cast in the same mould of thought; a world with a universal climate, no less than a universal language and religion; incidentally, a world in which all sensational journalism would be rigorously repressed as tending to upset the complete equability of life.

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JOURNAL

OF THE

Royal United Service Institution

WHITEHALL, S.W. 1

PUBLISHED BY AUTHORITY OF THE COUNCIL.

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VOL. LXXXI.

FEBRUARY TO NOVEMBER, 1936.

LONDON:
ROYAL UNITED SERVICE INSTITUTION,
WHITEHALL, LONDON, S.W. 1

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PUBLISHED QUARTERLY, Price 5s. net.

No. 102. OCTOBER, 1936.

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